NOTES:
1. PERSPECTIVE VIEW SHOWS ONE CORNER, BUT CLEAR SIGHT TRIANGLE APPLIES TO ALL CORNERS OF AN INTERSECTION.
EXAMPLE
MAJOR STREET SPEED LIMIT = 30 M.P.H.
MINOR STREET SPEED LIMIT = 20 M.P.H.

NOTES:
1. SEE SECTION 4B.150 OF THE EDDS FOR MORE INFORMATION ON THE VERTICAL CLEARANCE WITHIN THE CLEAR SIGHT ZONE.
EXAMPLE
MAJOR STREET SPEED LIMIT = 25 M.P.H.
MINOR STREET SPEED LIMIT = 25 M.P.H.

NOTES:
1. SEE SECTION 4B.150 OF THE EDDS FOR MORE INFORMATION ON THE VERTICAL CLEARANCE WITHIN THE CLEAR SIGHT ZONE.
### Dimensions in Feet

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Sidewalk</th>
<th>Planting</th>
<th>Bike Lane</th>
<th>Lane</th>
<th>Median</th>
<th>Left Turn Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Clear Zone</th>
<th>Curb</th>
<th>Gutter</th>
<th>Clear Zone</th>
<th>Shoulder</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>A 8</td>
<td>B 10</td>
<td>C 5</td>
<td>D 10</td>
<td>E 0</td>
<td>F 14</td>
<td>G 0</td>
<td>H 1</td>
<td>I 5</td>
<td>J 0.5</td>
<td>K 1</td>
<td>L 7</td>
<td>M 3</td>
</tr>
<tr>
<td>3 Lanes</td>
<td>A 8</td>
<td>B 10</td>
<td>C 5</td>
<td>D 10</td>
<td>E 0</td>
<td>F 3</td>
<td>G 11</td>
<td>H 1</td>
<td>I 5</td>
<td>J 0.5</td>
<td>K 1</td>
<td>L 0</td>
<td>M 3</td>
</tr>
<tr>
<td>4 Lanes</td>
<td>A 8</td>
<td>B 10</td>
<td>C 5</td>
<td>D 10</td>
<td>E 0</td>
<td>F 14</td>
<td>G 0</td>
<td>H 1</td>
<td>I 5</td>
<td>J 0.5</td>
<td>K 1</td>
<td>L 0</td>
<td>M 0</td>
</tr>
<tr>
<td>5 Lanes</td>
<td>A 8</td>
<td>B 10</td>
<td>C 5</td>
<td>D 10</td>
<td>E 0</td>
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<td>I 5</td>
<td>J 0.5</td>
<td>K 1</td>
<td>L 0</td>
<td>M 0</td>
</tr>
</tbody>
</table>

**F1 = Combination Center Left Turn & Median**

2 and 3 lane boulevard street section must maintain 18 feet from curb face to curb face.

See standard drawing 4-6A for minimum structural design and street cross slope design.

See minimum street design standards table for additional design elements.

ADT 14,000–40,000
<table>
<thead>
<tr>
<th>NUMBER OF LANES</th>
<th>R/W BEHIND SIDEWALK</th>
<th>SIDEWALK</th>
<th>SWALE*</th>
<th>BIKE LANE</th>
<th>LANE</th>
<th>LANE</th>
<th>SHOULDER</th>
<th>MEDIAN</th>
<th>LEFT TURN LANE</th>
<th>TREE SETBACK</th>
<th>CLEAR ZONE</th>
<th>CLEAR ZONE</th>
<th>RIGHT OF WAY</th>
<th>ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 LANES</td>
<td></td>
<td>1</td>
<td>8</td>
<td>11.5</td>
<td>5</td>
<td>10</td>
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<td>14</td>
<td>0</td>
<td>3.5</td>
<td>1.5</td>
<td>7</td>
<td>91</td>
</tr>
<tr>
<td>3 LANES</td>
<td></td>
<td>1</td>
<td>8</td>
<td>11.5</td>
<td>5</td>
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<td>11</td>
<td>0</td>
<td>3.5</td>
<td>1.5</td>
<td>0</td>
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</tr>
<tr>
<td>4 LANES</td>
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<td>8</td>
<td>11.5</td>
<td>5</td>
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<td>14</td>
<td>0</td>
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<td>1.5</td>
<td>7</td>
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<tr>
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<td>3</td>
<td>3.5</td>
<td>1.5</td>
<td>0</td>
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</tbody>
</table>

* SEE STANDARD DRAWING 5-11 OR 5-12A FOR LID SWALE DETAILS
** H1 = COMBINATION CENTER LEFT TURN & MEDIAN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

SEE STANDARD DRAWING 4-6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

2 AND 3 LANE BOULEVARD STREET SECTION MUST MAINTAIN ≥ 18 FEET FROM CURB FACE TO CURB FACE

ADT 14,000–40,000
## Dimensions in Feet

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Right of Way</th>
<th>Clear Zone</th>
<th>Tree Setback</th>
<th>Left Turn</th>
<th>Lane</th>
<th>Bike Lane</th>
<th>Swale</th>
<th>Sidewalk</th>
<th>R/W Behind</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>1</td>
<td>8</td>
<td>11.5</td>
<td>10</td>
<td>0</td>
<td>0</td>
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<tr>
<td>3 Lanes</td>
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<td>10</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>4 Lanes</td>
<td>1</td>
<td>8</td>
<td>11.5</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>8</td>
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<td>10</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

* See Standard Drawing 5-11 or 5-12A for Lid Swale Details

## Notes

- See Standard Drawing 4-6A for Minimum Design and Street Cross Slope Design
- See Minimum Street Design Standards Table for Additional Design Elements

## ADT

- 14,000 - 40,000

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**City of Olympia**

**Approve by:**

| FRAN R. EIDE, PE |
| CITY ENGINEER |

**Revised Date:** 8/30/2018

**Std. DWG. NO.:** 4-2B-LID

**Arterial with Lid Swale**
### Dimensions (in Feet)

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Sidewalk</th>
<th>Planting</th>
<th>Bike Lane</th>
<th>Left Turn Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Curb</th>
<th>Clear Zone</th>
<th>RIGHT OF WAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>6</td>
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<td>5</td>
<td>10</td>
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<td>0.5</td>
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<tr>
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<td>6</td>
<td>5</td>
<td>10</td>
<td>1</td>
<td>0.5</td>
<td>3</td>
<td>67</td>
</tr>
<tr>
<td>4 Lanes</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>10</td>
<td>1</td>
<td>0.5</td>
<td>3</td>
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<td>5</td>
<td>10</td>
<td>1</td>
<td>0.5</td>
<td>3</td>
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</table>

**See Standard Drawing 4-6A for Minimum Structural Design and Street Cross Slope Design**

**See Minimum Street Design Standards Table for Additional Design Elements**

**ADT**

3,000–14,000
**Dimensions = Feet**

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Sidewalk</th>
<th>Bike Lane</th>
<th>Lane</th>
<th>Lane</th>
<th>Left Turn Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Clear Zone</th>
<th>Tree setback</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>6</td>
<td>12</td>
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<td>3.5</td>
</tr>
<tr>
<td>3 Lanes</td>
<td>6</td>
<td>12</td>
<td>5</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
<td>4 Lanes</td>
<td>6</td>
<td>12</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
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<td>10</td>
<td>10</td>
<td>11</td>
<td>1</td>
<td>3</td>
<td>3.5</td>
</tr>
</tbody>
</table>

* See standard drawings 5-11 or 5-12A for Lid Details.

See standard drawing 4-6A for minimum structural design and street cross slope design.

See minimum street design standards table for additional design elements.

Adt: 3,000 - 14,000
DIMENSIONS = FEET

<table>
<thead>
<tr>
<th>NUMBER OF LANES</th>
<th>SIDEWALK</th>
<th>PARKING</th>
<th>BIKE LANE</th>
<th>LANE</th>
<th>LANE</th>
<th>MEDIAN</th>
<th>LEFT TURN LANE</th>
<th>R/W BEHIND SIDEWALK</th>
<th>CLEAR ZONE</th>
<th>CURB</th>
<th>GUTTER</th>
<th>CLEAR ZONE</th>
<th>RIGHT OF WAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 LANES</td>
<td>10</td>
<td>8</td>
<td>5</td>
<td>10</td>
<td>0</td>
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<td>0</td>
<td>1</td>
<td>3</td>
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<td>1</td>
<td>7</td>
<td>80</td>
</tr>
<tr>
<td>3 LANES</td>
<td>10</td>
<td>8</td>
<td>5</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>11</td>
<td>1</td>
<td>3</td>
<td>0.5</td>
<td>1</td>
<td>0</td>
<td>80</td>
</tr>
<tr>
<td>4 LANES</td>
<td>10</td>
<td>8</td>
<td>5</td>
<td>10</td>
<td>0</td>
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<td>3</td>
<td>0.5</td>
<td>1</td>
<td>7</td>
<td>104</td>
</tr>
</tbody>
</table>

F1 = COMBINATION CENTER LEFT TURN & MEDIAN

SEE STANDARD DRAWING 4–6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

ADT
3,000–14,000
### Dimensions (Feet)

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Sidewalk</th>
<th>Parking</th>
<th>Bike Lane</th>
<th>Lane</th>
<th>Left Turn Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Clear Zone</th>
<th>Curb</th>
<th>Gutter</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>A 10</td>
<td>B 8</td>
<td>C 5</td>
<td>D 10</td>
<td>E 0</td>
<td>F 0</td>
<td>G 1</td>
<td>H 3</td>
<td>J 0.5</td>
<td>J 1</td>
</tr>
<tr>
<td>3 Lanes</td>
<td>A 10</td>
<td>B 8</td>
<td>C 5</td>
<td>D 10</td>
<td>E 0</td>
<td>F 1</td>
<td>G 1</td>
<td>H 3</td>
<td>J 0.5</td>
<td>J 1</td>
</tr>
<tr>
<td>4 Lanes</td>
<td>A 10</td>
<td>B 8</td>
<td>C 5</td>
<td>D 10</td>
<td>E 0</td>
<td>F 1</td>
<td>G 1</td>
<td>H 3</td>
<td>J 0.5</td>
<td>J 1</td>
</tr>
</tbody>
</table>

**SEE STANDARD DRAWING 4-6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN**

**SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS**

| ADT | 3,000–14,000 |
NUMBER OF LANES | R/W BEHIND SIDEWALK | SIDEWALK | SIDEWALK | PARKING | BIOTENATION CELL | BIKE LANE | LANE | LANE | LEFT TURN LANE | CLEAR ZONE | CURB | RIGHT OF WAY | ROW
---|---|---|---|---|---|---|---|---|---|---|---|---|---
2 LANES | 1 | 10 | 8 | 8 | 10 | 5 | 10 | 0 | 0 | 3 | 0.5 | 68
3 LANES | 1 | 10 | 8 | 8 | 10 | 5 | 10 | 0 | 11 | 3 | 0.5 | 79
4 LANES | 1 | 10 | 8 | 8 | 10 | 5 | 10 | 0 | 0 | 3 | 0.5 | 88

With parking use B and C; with biotention cell use B1 and C1

See standard drawing 4–2E–LID2 for plan view

Biotention cell locations may vary for site conditions.

See standard drawings 5–12A for lid swale details.
NOTES:
1. REFER TO STANDARD DRAWING 4–2E–LID1 FOR STREET CROSS–SECTION DIMENSIONS.
2. BIORETENTION CELL PLANTINGS AS APPROVED BY THE ENGINEER.
3. NUMBER OF LANES AS APPROVED BY THE ENGINEER.
4. PROVIDE PARKING METER POSTS AND MARKINGS PER CITY STANDARDS.
5. REFER TO EDDS CHAPTER 5 FOR BIORETENTION CELL DETAILS AND PLANTING SCHEDULE.
6. ADDITIONAL BIORETENTION CELLS AT SIMILAR SPACING AS NEEDED TO BE PROVIDED.
**DIMENSIONS = FEET**

<table>
<thead>
<tr>
<th>NUMBER OF LANES</th>
<th>R/W BEHIND SIDEWALK</th>
<th>SIDEWALK</th>
<th>PLANTING</th>
<th>BIKE LANE</th>
<th>LANE</th>
<th>LANE</th>
<th>SWALE</th>
<th>LEFT TURN</th>
<th>CLEAR ZONE</th>
<th>RIGHT OF WAY</th>
<th>ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 LANES</td>
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<td>10</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td>4</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>4 LANES</td>
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<td>14</td>
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<td>4</td>
<td>96</td>
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</tbody>
</table>

*Includes curb; see standard drawing 5–12C for lid swale details

#G1 = Combination Center Left Turn & Median

SEE STANDARD DRAWING 4–6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

2 AND 3 LANE BOULEVARD STREET SECTIONS MUST MAINTAIN ≥ 18 FEET FROM CURB FACE TO MEDIAN

ADT: 3,000–14,000
### Dimensions (in feet)

**City of Olympia**

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Sidewalk</th>
<th>Planting</th>
<th>Bike Lane</th>
<th>Lane</th>
<th>Left Turn Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Curb</th>
<th>Clear Zone</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>6</td>
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<td>8</td>
<td>5</td>
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<td>1</td>
<td>1</td>
<td>0.5</td>
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<tr>
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<td>0</td>
<td>1</td>
<td>0.5</td>
<td>4</td>
<td>80</td>
</tr>
</tbody>
</table>

**See Minimum Street Design Standards Table for Additional Design Elements**

**See Standard Drawing 4-6A for Minimum Structural Design and Street Cross Slope Design**

| ADT  | 3,000–14,000 |
HARRISON AVE. TO PARK PROPERTY SOUTH BORDER

WESTSIDE

EASTSIDE

DIMENSIONS = FEET

CITY OF OLYMPIA

2 LANES

3 LANES

2 LANES

3 LANES

SEE STANDARD DRAWING 4–6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

REFER TO EDDS 48.085 STREET FRONTAGE IMPROVEMENTS WEST BAY DRIVE.

ADT

3,000–14,000
HARRISON AVE. TO PARK PROPERTY SOUTH BORDER

- This area is both developed and steep, therefore no widening is recommended. (Widening in this area would make the steep driveways much steeper and possibly unusable.)
- To make room for the bicycle lanes, the existing on-street parking would be removed. This change will require re-striping of the street rather than construction. (The only way to have both bicycle lanes and on-street parking is to widen the street.)
- To give residents other options for parking for guests and during inclement weather, pocket parking is recommended for the area just north of where the existing sidewalk ends today. In this area it is possible to get bicycle lanes and parking without building high retaining walls or impacting any existing businesses or residences. Parking on Sherman Street is also available.
- The missing sections of sidewalk would be added, as would any necessary repairs to existing sidewalks. If possible, an additional 1-foot of sidewalk would be added on the waterfront side to bring it up to the standard of 6-feet. These changes would likely occur as the utilities were placed underground or the roadbed repaired.
- If this area does redevelop, the potential for planter strips should be evaluated with similar criteria as those in the "West side of the street – north of Brawne Avenue" section.
PARK PROPERTY SOUTH BORDER TO GARFIELD TRAIL

DIMENSIONS = FEET

1 RETAINING WALLS

NUMBER OF LANES

<table>
<thead>
<tr>
<th></th>
<th>&lt; 3'</th>
<th>= 3'</th>
<th>&gt; 3'</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIDEWALK</td>
<td>PLANTING CLEAR ZONE</td>
<td>PLANTING CLEAR ZONE</td>
<td>PLANTING CLEAR ZONE</td>
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<tr>
<td>A1</td>
<td>A2</td>
<td>B</td>
<td>H</td>
</tr>
<tr>
<td>A2</td>
<td>B</td>
<td>H</td>
<td>A2</td>
</tr>
<tr>
<td>B</td>
<td>H</td>
<td>A2</td>
<td>B</td>
</tr>
<tr>
<td>H</td>
<td>A2</td>
<td>B</td>
<td>H</td>
</tr>
<tr>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
<td>G</td>
<td>I</td>
</tr>
</tbody>
</table>

2 DOWN SLOPES > 2:1 AND RETAINING WALLS ADJACENT TO SIDEWALKS REQUIRE A HANDRAIL

SEE STANDARD DRAWING 4-6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

ADT 3,000-14,000

REFER TO EDDS 4B.085 - STREET FRONTAGE IMPROVEMENT WEST BAY DR.
PARK PROPERTY SOUTH BORDER TO GARFIELD TRAIL

EAST SIDE OF THE STREET:
- This area is part of the frontage for the proposed West Bay Park.
- Parts of this area have great potential for panoramic views of downtown Olympia; benches are recommended.
- To keep the bicycle network continuous, bicycle lanes will be placed adjacent to the vehicle travel lanes.
- To accommodate the loss of parking in the section of the street to the south, pocket parking will be added if it can be achieved without requiring a retaining wall greater than 3-feet in height.
- Parking will be broken up or non-continuous using bulb-out type landscaping to keep the street profile small and encourage slower vehicle speeds. It will replace the landscape strip.
- In parts of this section retaining walls will likely be needed. In order to minimize the height of the retaining walls, there are three recommended variations on street improvements recommended, which all relate to the width of the landscape strip.
  - A) flat slope – retaining wall less than 3-feet – 8-foot pocket parking with landscape bulb-outs between the sidewalk and bicycle lane.
  - B) moderate slope – retaining wall approximately 3-feet – no separate landscape strip but 10-foot sidewalk with street trees.
  - C) steep slope – retaining wall greater than 3-feet – no landscape or pocket parking strip.
- To provide safety for pedestrians a handrail will be required wherever there is a retaining wall (drop off) next to the sidewalk or if the slope is greater than a 2:1 (horizontal to vertical) grade.

WEST SIDE OF THE STREET:
- This area is both developed and steep, therefore no widening is recommended on the west side of the street. (widening in this area would make the steep driveways much steeper and possibly unusable.)
- To give residents other options for parking for guests and during inclement weather, pocket parking is recommended for the area just north of where the existing sidewalk ends today. In this area it is possible to get bicycle lanes and parking without building high retaining walls or impacting any existing businesses or residences. Parking on Sherman Street is also available.
- If this area does redevelop, the potential for planter strips should be evaluated with similar criteria as those in the "West side of the street – north of Brawne Avenue" section.

GARFIELD TRAIL INTERSECTION:
- Install a pedestrian crossing island with a minimum width of 6-feet, provided no significant topographic constraints exist.
GARFIELD TRAIL TO BRAWNE AVE. INTERSECTION

DIMENSIONS = FEET

- **Retaining Walls**
  - Retaining walls are required when the drop is greater than 3 feet.

- **Sidewalks Below Grade**
  - Sidewalks below grade require a handrail or guardrail.

- **Tables**
<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>2 Lanes</th>
<th>3 Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 A2 B H A2 B H A2 B H A2 B H</td>
<td>6 6 8 4 10 0 3 6 0 7.5 6 8–40 4 5 11 0</td>
<td>1 OR 3 0.5 VARIES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ADT 3,000–14,000</td>
</tr>
</tbody>
</table>

- **Notes**
  1. Down slopes >2:1 and retaining walls adjacent to sidewalks require a handrail or guardrail eval.
  2. Down slopes >4:1 and retaining walls adjacent to streets require a guardrail eval.
  3. Sidewalks below grade with planter < 30–feet will have a max slope of 2:1.
  4. Sidewalks below grade with planter >= 30–feet will have a max slope of 3:1.

Refer to EDDS 48.085 - Street Frontage Improvement West Bay Dr.
GARFIELD TRAIL TO BRAWNE AVE. INTERSECTION

EAST SIDE OF THE STREET:
- This area is part of the frontage for the proposed West Bay Park.
- This area has a great potential for panoramic views of downtown Olympia; benches are recommended.
- To keep the bicycle network continuous, the bicycle lanes will remain next to the vehicle travel lanes.
- To preserve flexibility for future park design, sidewalks can be either at street level or down slope slightly.
- Sidewalks will be a minimum of 6-feet wide. Below grade option —
- The landscape strip will be a minimum of 8 horizontal feet. Maximum separation will be no more than 40-feet.
- To provide safety for pedestrians a handrail will be required if there is a retaining wall (drop off) next to the sidewalk, or if the slope is greater than a 2:1 (horizontal to vertical) grade.
- For safety, a guardrail will be required on the backside or curb side of the bicycle lane if the slope is steeper than a 4:1 (horizontal to vertical) grade to the sidewalk.
- If the sidewalk is built at street level retaining walls will likely be needed. In order to minimize the height of the retaining walls, there are three recommended variations on street improvements, which all relate to the width of the landscape strip. The optimum is to keep the retaining walls 3-feet or less in height because this is the threshold where retaining walls begin to require more structured engineering.
  A) Flat slope — Retaining wall less than 3-feet — 8-foot landscape strip between the 6-foot sidewalk and bicycle lane. Pocket parking is not recommended in this section.
  B) Moderate slope — Retaining wall approximately 3-feet — No separate landscape strip but 10-foot sidewalk with landscaping.
  C) Steep slope — Retaining wall greater than 3-feet — No landscape or pocket parking strip.

WEST SIDE OF THE STREET:
- This area is both developed and steep, therefore no widening is recommended on the west side of the street. (Widening in this area would make the steep driveways much steeper and possibly unusable.)
- To give residents other options for parking for guests and during inclement weather, pocket parking is recommended for the area just north of where the existing sidewalk ends today. In this area it is possible to get bicycle lanes and parking without building high retaining walls or impacting any existing businesses or residences. Parking on Sherman Street is also available.
- If this area does redevelop, the potential for planter strips should be evaluated with similar criteria as those in the “West side of the street — north of Brawne Avenue” section.

BRAWNE AVE. INTERSECTION:
- A left turn lane is recommended for the Brawne Avenue intersection.
- South of the intersection, install a left turn lane to facilitate vehicle flow.
- North of the intersection, install a pedestrian crossing island.
**BRAWNE AVE. INTERSECTION TO PARK PROPERTY NORTH BORDER**

**Dimensions = Feet**

### Retaining Walls

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Sidewalk</th>
<th>Planter</th>
<th>Clear Zone</th>
<th>Sidewalk</th>
<th>Planter</th>
<th>Clear Zone</th>
<th>Sidewalk</th>
<th>Planter</th>
<th>Clear Zone</th>
<th>Bike Lane</th>
<th>Left Turn Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Curb</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>A1</td>
<td>B</td>
<td>H</td>
<td>A1</td>
<td>B</td>
<td>H</td>
<td>A1</td>
<td>B</td>
<td>H</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
</tr>
<tr>
<td>3 Lanes</td>
<td>A1</td>
<td>B</td>
<td>H</td>
<td>A1</td>
<td>B</td>
<td>H</td>
<td>A2</td>
<td>B</td>
<td>H</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
</tr>
</tbody>
</table>

### Sidewalks Below Grade

<table>
<thead>
<tr>
<th>Sidewalk</th>
<th>Planter</th>
<th>Clear Zone</th>
<th>Sidewalk</th>
<th>Planter</th>
<th>Clear Zone</th>
<th>Sidewalk</th>
<th>Planter</th>
<th>Clear Zone</th>
<th>Bike Lane</th>
<th>Left Turn Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Curb</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td>10</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>0</td>
<td>7.5</td>
<td>10</td>
<td>8-40</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3 Lanes</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td>10</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>0</td>
<td>7.5</td>
<td>10</td>
<td>8-40</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**Notes:**

1. Down slopes >2:1 and retaining walls adjacent to sidewalks require a handrail or guardrail evaluation.
2. Down slopes >4:1 and retaining walls adjacent to streets require a guardrail evaluation.
3. Sidewalks below grade with planter < 30 feet will have a max slope of 2:1.
4. Sidewalks below grade with planter ≥ 30 feet will have a max slope of 3:1.

**ADT**

3,000–14,000

**Refer to EDDs 48.085 – Street Frontage Improvement West Bay Dr.**

**See Minimum Street Design Standards Table for Additional Design Elements**

**See Standard Drawing 4-6A for Minimum Structural Design and Street Cross Slope Design**
BRAWNE AVE. INTERSECTION TO PARK PROPERTY NORTH BORDER

EAST SIDE OF STREET:
- TO KEEP THE BICYCLE NETWORK CONTINUOUS, BICYCLE LANES WILL REMAIN NEXT TO THE VEHICLE LANES 34 OR MORE FEET.
- THE PROPOSED PARK TRAIL AND WIDEWALK WILL BE COMBINED IN A 10-FOOT MULTI-USE FACILITY.
- THE LANDSCAPE STRIP WILL BE A MINIMUM OF 8 HORIZONTAL FEET. MAXIMUM SEPARATION WILL BE NO MORE THAN 40-FEET.
- THE RAILROAD RIGHT-OF-WAY WILL BE USED FOR COMBINED TRAIL-SIDEWALK FACILITY WHEREVER PRACTICAL AND SAFE.
- FOR SAFETY, PEDESTRIANS WILL BE VISIBLE FROM THE STREET.
- FOR SAFETY, A GUARDRAIL WILL BE REQUIRED ON THE BACKSIDE OR CURB SIDE OF THE BICYCLE LANE IF THE SLOPE IS STEEPER THAN A 4:1 (HORIZONTAL TO VERTICAL) GRADE.

WEST SIDE OF STREET:
- THIS SECTION OF THE STREET IS CHARACTERIZED BY STEEP HILLSIDES ALTERNATING WITH AREAS OF FLATTER TOPOGRAPHY. THERE ARE SECTIONS OF EXISTING SIDEWALKS TOWARDS THE SOUTH AND OTHER AREAS WITH FULL STREET IMPROVEMENTS, OR THAT WILL SOON HAVE FULL STREET IMPROVEMENTS, TO THE NORTH. THE FLATTER PARCELS ARE LIKELY TO SEE DEVELOPMENT OR REDEVELOPMENT IN THE NEAR FUTURE. THE STEEPER AREAS ARE LESS LIKELY TO DEVELOP OR REDEVELOP. SOME PROPERTIES ARE ON THE HISTORIC REGISTER.
- TO KEEP THE BICYCLE NETWORK CONTINUOUS, BICYCLE LANES WILL BE PLACED ADJACENT TO THE VEHICLE TRAVEL LANES.
- FOR PEDESTRIAN SAFETY, SIDEWALKS (MINIMUM 6- FEET) WILL BE ADDED.
- IN SOME AREAS, RETAINING WALLS WILL LIKELY BE NEEDED. IN ORDER TO MINIMIZE THE HEIGHT OF THE RETAINING WALLS, THERE ARE THREE RECOMMENDED VARIATIONS ON THE STREET IMPROVEMENTS WHICH ALL RELATE TO THE WIDTH OF THE LANDSCAPE STRIP. THE OPTIMUM IS TO KEEP THE RETAINING WALLS 3- FEET OR LESS IN HEIGHT BECAUSE THIS IS THE THRESHOLD WHERE RETAINING WALLS BEGIN TO REQUIRE MORE STRUCTURED ENGINEERING. SMALLER RETAINING WALLS WILL ALSO MAKE FOR A MORE PLEASANT PEDESTRIAN EXPERIENCE.
  A) FLAT SLOPE – RETAINING WALL LESS THAN 3- FEET – 6-FOOT SIDEWALK WITH 8-FOOT LANDSCAPE STRIP BETWEEN THE SIDEWALK AND BICYCLE LANE.
  B) MODERATE SLOPE – RETAINING WALL APPROXIMATELY 3- FEET – NO SEPARATE LANDSCAPE STRIP BUT 10-FOOT SIDEWALK WITH STREET TREES.
  C) STEEP SLOPE – RETAINING WALL GREATER THAN 3- FEET – NO LANDSCAPE STRIP BUT AN 8-FOOT SIDEWALK TO PROVIDES ADDITIONAL SPACE FOR PEDESTRIANS WALKING ADJACENT TO THE RETAINING WALL.
- THESE REQUIREMENTS ARE FELT TO BE THE MINIMUM ACCEPTABLE STANDARDS THAT PROVIDE SAFE VEHICLE, PEDESTRIAN, AND BICYCLE FACILITIES WHILE TAKING INTO ACCOUNT THE UNIQUE REQUIREMENTS OF THE STEEP TOPOGRAPHY IN PLACES ALONG THE STREET.
- AS AREAS REDEVELOP, FULL RIGHT-OF-WAY (FOR FULL STREET STANDARDS) WILL BE DEDICATED TO THE CITY. THIS WILL ENSURE THAT THE "BEST ENGINEERING SOLUTION" WILL BE APPLIED TO THE AREA, AND ALLOW FOR LANDSCAPING BEHIND THE SIDEWALK IN AREAS OF STEEP TOPOGRAPHY.

BRAWNE AVE. INTERSECTION:
- A LEFT TURN LANE IS RECOMMENDED FOR THE BRAWNE AVENUE INTERSECTION.
- SOUTH OF THE INTERSECTION, INSTALL A LEFT TURN LANE TO FACILITATE VEHICLE FLOW.
- NORTH OF THE INTERSECTION, INSTALL A PEDESTRIAN CROSSING ISLAND.
# PARK PROPERTY NORTH BORDER TO BASE OF SCHNEIDER HILL

**Dimensions = Feet**

<table>
<thead>
<tr>
<th>Retaining Walls</th>
<th>Sidewalks Below Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>&lt; 3'</strong></td>
<td><strong>= 3'</strong></td>
</tr>
<tr>
<td><strong>&gt; 3'</strong></td>
<td></td>
</tr>
<tr>
<td>Number of Lanes</td>
<td></td>
</tr>
<tr>
<td>2 LANES</td>
<td></td>
</tr>
<tr>
<td>3 LANES</td>
<td></td>
</tr>
</tbody>
</table>

1. **Retaining Walls**
   - A1: 6
   - B: 8
   - H: 10
   - A1: 0
   - B: 3
   - H: 2.5
   - A1: 6
   - B: 8
   - H: 10
   - A2: 4
   - B: 3
   - H: 2.5
   - A1: 6
   - B: 8
   - H: 10

2. **Sidewalks Below Grade**
   - Lane: 1 or 3
   - 0.5
   - Varies

3. **Down slopes >4:1 and retaining walls adjacent to streets require a guardrail evaluation.**

4. **Sidewalks below grade with planter < 30 feet will have a max slope of 2:1.**

5. **Sidewalks below grade with planter >= 30 feet will have a max slope of 3:1.**

Refer to EDDS 48.085 – Street Frontage Improvement West Bay Dr.

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**See Standard Drawing 4-6A for minimum structural design and street cross slope design.**

**See Minimum Street Design Standards Table for additional design elements.**

**ADT 3,000-14,000**
PARK PROPERTY NORTH BORDER TO BASE OF SCHNEIDER HILL

EAST SIDE OF STREET:
- This area includes current or former industrial properties. The properties that are vacant now are expected to redevelop in the near term. The remaining industrial site (Brown-Minneapolis Tank) will likely remain industrial in the near term.
- To keep the bicycle network continuous, the bicycle lanes will remain next to the vehicle travel lanes.
- Option A: The long-term plan is for the west bay multi-use trail to follow the shoreline. If the trail is built at the same time or prior to street improvements, then:
  - A 6-foot sidewalk below street grade will complete the pedestrian facilities. The sidewalk will come to grade at driveways and any intersections.
  - The landscape strip is a minimum of 8 horizontal feet. Placing the sidewalk below grade will minimize the need for retaining walls but may require additional right-of-way. The sidewalk may be placed at grade if preferred.
  - For safety, pedestrians will be visible from the street.
  - For safety, a guardrail will be required if the slope is steeper than a 4:1 (horizontal to vertical) grade.
- Option B: Across from the Brown-Minneapolis Tank property the long-term plan is to have the trail along the shoreline. If street improvements are made while the site remains in industrial use, it is recommended that the trail be combined with the sidewalk into a 10-foot multi-use facility. All other conditions from Option A will apply.

WEST SIDE OF STREET:
- This section of the street is characterized by steep hill slopes alternating with areas of flatter topography. There are sections of existing sidewalks toward the south and other areas with full street improvements, or that will soon have full street improvements, to the north. The flatter parcels are likely to see development or redevelopment in the near future. The steeper areas are less likely to develop or redevelop. Some properties are on the historic register.
- To keep the bicycle network continuous, bicycle lanes will be placed adjacent to the vehicle travel lanes.
- For pedestrian safety, sidewalks (minimum 6-foot) will be added.
- In some areas, retaining walls will likely be needed. In order to minimize the height of the retaining walls, there are three recommended variations on the street improvements which all relate to the width of the landscape strip. The optimum is to keep the retaining walls 3-feet of less in height because this is the threshold where retaining walls begin to require more structured engineering. Smaller retaining walls will also make for a more pleasant pedestrian experience.
  - Flat slope – Retaining wall less than 3-feet – 6-foot sidewalk with 8-foot landscape strip between the sidewalk and bicycle lane.
  - Moderate slope – Retaining wall approximately 3-feet – No separate landscape strip but 10-foot sidewalk with street trees.
  - Steep slope – Retaining wall greater than 3-feet – No landscape strip but an 8-foot sidewalk to provide additional space for pedestrians walking adjacent to the retaining wall.
- These requirements are felt to be the minimum acceptable standards that provide safe vehicle, pedestrian, and bicycle facilities while taking into account the unique requirements of the steep topography in places along the street.
- As areas redevelop, full right-of-way (for full street standards) will be dedicated to the city. This will ensure that the "best engineering solution" be applied to the area, and allow for landscaping behind the sidewalk in areas of steep topography.

WOODARD AVENUE INTERSECTION:
- Install a pedestrian crossing island (minimum 6-foot width).
Schneider Hill

Dimensions = Feet

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Sidewalk</th>
<th>Bike Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Curb</th>
<th>Clear Zone</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
<td>G</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>10</td>
<td>1</td>
<td>0.5</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Refer to EDDS 48.085 - Street Frontage Improvement West Bay Dr.

See Standard Drawing 4-6A for Minimum Structural Design and Street Cross Slope Design

See Minimum Street Design Standards Table for Additional Design Elements

ADT 3,000–14,000
SCHNEIDER HILL

- This is the steepest section of street in the study area. Any street widening will require engineered retaining walls. The existing sidewalk is 5-feet wide, and is adjacent to a high retaining wall.
- Due to the difficulties in street widening, no planter strips will be required.
- To provide for pedestrian safety, a wider (8-foot) sidewalk on the west side of the street is recommended.
- Bicycle lanes are in the Olympia Comprehensive Plan for Schneider Hill to link to the Westside neighborhoods. The city street standards define bicycle lanes in both directions therefore bicycle lanes on both sides of the street are recommended for this section.
**Schneider Hill to Marina**

**West Side**

**East Side**

**Dimensions = Feet**

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Sidewalk</th>
<th>Planting (Pocket Parking)</th>
<th>Bike Lane</th>
<th>Left Turn Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Curb</th>
<th>Clear Zone</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Lanes</td>
<td>A 10</td>
<td>B 8</td>
<td>C 5</td>
<td>D 11</td>
<td>E 0</td>
<td>F 1</td>
<td>G 0.5</td>
<td>H 4</td>
</tr>
<tr>
<td>3 Lanes</td>
<td>A 10</td>
<td>B 8</td>
<td>C 5</td>
<td>D 11</td>
<td>E 1</td>
<td>F 0.5</td>
<td>G 4</td>
<td>H 70</td>
</tr>
</tbody>
</table>

Refer to EDDS 48.085 - Street Frontage Improvement West Bay Dr.

See standard drawing 4-6A for minimum structural design and street cross slope design.

See minimum street design standards table for additional design elements.

ADT 3,000-14,000
SCHNEIDER HILL TO MARINA

THE BASE OF SCHNEIDER HILL TO THE MARINA:

- This section of West Bay Drive is classified as a "Major Commercial Collector" and has slightly different standards than the other sections. There is a steep, wet hill on the west side of this street. On the waterfront side the topography is flatter, but the railroad and railroad right-of-way run through the street.

- To provide a continuous bicycle network out to the Marina, bicycle lanes will be placed next to the vehicle travel lanes.

- As development is only expected to occur on the waterfront side of this street, onstreet pocket parking with landscaping bulb-outs, and a 10-foot sidewalk are recommended for this side only.

- The 10-foot sidewalk would link into the proposed West Bay Trail System to provide a continuous, wide, pedestrian facility all the way from the Marina to downtown.

- Any additional widening or frontage improvements on the west side of the street are not recommended due to the steep, wet slopes.
PLUM STREET TO CHERRY STREET

WESTSIDE

EASTSIDE

DIMENSIONS = FEET

NUMBER OF LANES

<table>
<thead>
<tr>
<th>SIDEWALK</th>
<th>POCKET PARKING</th>
<th>BIKE LANE</th>
<th>LANE</th>
<th>LANE</th>
<th>LEFT TURN LANE</th>
<th>R/W BEHIND SIDEWALK</th>
<th>CLEAR ZONE</th>
<th>CURB</th>
<th>GUTTER</th>
<th>RIGHT OF WAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 LANES</td>
<td>17</td>
<td>8</td>
<td>5</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
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<tr>
<td>3 LANES</td>
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<td>0</td>
<td>11</td>
<td>1</td>
<td>3</td>
<td>0.5</td>
<td>1</td>
</tr>
</tbody>
</table>

* BULB-OUTS WILL BE PROVIDED MID-BLOCK AND ON ALL CORNERS
REFER TO EDDS 4B.095-STREET FRONTAGE IMPROVEMENT EAST DOWNTOWN

SEE STANDARD DRAWING 4-6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

ADT 3,000–14,000
DIMENSIONS = FEET

<table>
<thead>
<tr>
<th>NUMBER OF LANES</th>
<th>R/W BEHIND SIDEWALK</th>
<th>SIDEWALK</th>
<th>SWALE</th>
<th>BIKE LANE</th>
<th>LANE</th>
<th>LANE</th>
<th>LEFT TURN LANE</th>
<th>TREE SETBACK</th>
<th>CLEAR ZONE</th>
<th>RIGHT OF WAY</th>
<th>ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 LANES</td>
<td>A 1</td>
<td>B 6</td>
<td>C 11</td>
<td>D 5</td>
<td>E 10</td>
<td>E1 0</td>
<td>F 0</td>
<td>G 3</td>
<td>H 3</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>3 LANES</td>
<td>A 1</td>
<td>B 6</td>
<td>C 11</td>
<td>D 5</td>
<td>E 10</td>
<td>E1 0</td>
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<td>H 3</td>
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<td>4 LANES</td>
<td>A 1</td>
<td>B 6</td>
<td>C 11</td>
<td>D 5</td>
<td>E 10</td>
<td>E1 0</td>
<td>F 3</td>
<td>G 3</td>
<td>H 3</td>
<td>86</td>
<td></td>
</tr>
</tbody>
</table>

SEE STANDARD DRAWING 4–6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

ADT 3,000–14,000

* SEE STANDARD DRAWING 5–11 OR 5–12A FOR LID SWALE DETAILS
NUMBER OF LANES | EASEMENT | SIDEWALK | PLANTING | LANE | MEDIAN | R/W BEHIND SIDEWALK | CLEAR ZONE | CURB | GUTTER | CLEAR ZONE | RIGHT OF WAY |
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
2 LANES | 10 | 5 | 16 | 10 | 1 | 4 | 0.5 | 1 | 5 | 74 | |

A = PRIVATE UTILITY EASEMENT

SEE STANDARD DRAWING 4-6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

ADT 500–3,000

BOULEVARD STREET SECTIONS MUST MAINTAIN 18 FEET FROM CURB FACE TO MEDIAN
**NUMBER OF LANES**

<table>
<thead>
<tr>
<th>EASEMENT</th>
<th>R/W BEHIND SIDEWALK</th>
<th>SIDEWALK</th>
<th>PLANTING</th>
<th>LANE</th>
<th>GUTTER</th>
<th>SWALE*</th>
<th>CLEAR ZONE</th>
<th>RIGHT OF WAY</th>
<th>ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td>H</td>
<td></td>
<td>75</td>
</tr>
</tbody>
</table>

2 Lanes:

A = PRIVATE UTILITY EASEMENT

* SEE STANDARD DRAWING 5-12C FOR LID SWALE DETAILS.

BOULEVARD STREET SECTIONS MUST MAINTAIN 18 FEET FROM CURB FACE TO MEDIAN.

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

SEE STANDARD DRAWING 4-6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

ADT 500-3,000
### Dimensions = Feet

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Easement</th>
<th>R/W Behind Sidewalk</th>
<th>Sidewalk</th>
<th>Swale</th>
<th>Parking</th>
<th>Bike Lane</th>
<th>Lane</th>
<th>Planting</th>
<th>Clear Zone</th>
<th>Tree Setback</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 LANES</td>
<td>A</td>
<td>A1</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td>H</td>
<td>I</td>
<td>J</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td>54</td>
</tr>
<tr>
<td>2 LANES CLASS II*</td>
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<td></td>
<td>3.5</td>
<td>2</td>
<td>65</td>
</tr>
</tbody>
</table>

A = Private Utility Easement

* SEE STANDARD DRAWINGS 5–11 OR 5–12A FOR LID SWALE DETAILS

*+ Gutter not allowed next to bike facility

SEE STANDARD DRAWING 4–6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

**ADT 500–3,000**
DIMENSIONS = FEET

<table>
<thead>
<tr>
<th>NUMBER OF LANE</th>
<th>EASEMENT</th>
<th>SIDEWALK</th>
<th>PLANTING</th>
<th>PARKING</th>
<th>LANE</th>
<th>R/W BEHIND SIDEWALK</th>
<th>CLEAR ZONE</th>
<th>CURB</th>
<th>GUTTER</th>
<th>RIGHT OF WAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 LANE</td>
<td>A 10</td>
<td>B 5</td>
<td>C 8</td>
<td>D 7</td>
<td>E 12</td>
<td>F 3</td>
<td>H 0.5</td>
<td>I 1</td>
<td>J 48</td>
<td>K</td>
</tr>
</tbody>
</table>

A = PRIVATE UTILITY EASEMENT

* - BLOCK SPACING >350' PARKING BULB-OUTS ARE REQUIRED (STANDARD DRAWING NO. 4-13B)

A 100' NO PARKING ZONE IN THE CENTER OF THE BLOCK IS REQUIRED FOR EMERGENCY VEHICLE ACCESS (EDDS 4C.070)

SEE STANDARD DRAWING 4–6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

ADT
0–500
**DIMENSIONS = FEET**

<table>
<thead>
<tr>
<th>NUMBER OF Lanes</th>
<th>EASEMENT</th>
<th>TREE EASEMENT</th>
<th>SIDEWALK</th>
<th>SWALE</th>
<th>PARKING*</th>
<th>LANE</th>
<th>R/W BEHIND SIDEWALK</th>
<th>CLEAR ZONE</th>
<th>CURB</th>
<th>GUTTER</th>
<th>RIGHT OF WAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 LANE</td>
<td>A</td>
<td>A1</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>H</td>
<td>I</td>
<td>J</td>
<td>K</td>
</tr>
<tr>
<td></td>
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<td>12</td>
<td>7</td>
<td>12</td>
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</tbody>
</table>

*A = PRIVATE UTILITY EASEMENT

* - BLOCK SPACING > 350" PARKING BULB-OUTS ARE REQUIRED (STANDARD DRAWING 4–13B)

A 100' NO PARKING ZONE IN THE CENTER OF THE BLOCK IS REQUIRED FOR EMERGENCY VEHICLE ACCESS (EDDS 4C.070)

SEE STANDARD DRAWING 5–12A FOR LID DETAIL
### Dimensions = Feet

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Easement</th>
<th>Sidewalk</th>
<th>Planting*</th>
<th>Parking*</th>
<th>Lane</th>
<th>R/W Behind Sidewalk</th>
<th>Clear Zone</th>
<th>Curb</th>
<th>Gutter</th>
<th>Dispersion Area</th>
<th>Right of Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Lane</td>
<td>A 10</td>
<td>B 5</td>
<td>C 8</td>
<td>D 7</td>
<td>E 13</td>
<td>F 3</td>
<td>G 0.5</td>
<td>H 1</td>
<td>I 11</td>
<td>J 46</td>
<td>K 11</td>
</tr>
</tbody>
</table>

C+K = COMPOST AMENDED SOILS   K = NATIVE VEGETATION
A = PRIVATE UTILITY EASEMENT + PUBLIC STORMWATER EASEMENT

* - BLOCK SPACING > 350' PARKING BULB-OUTS ARE REQUIRED (STANDARD DRAWING NO. 4-13B)

A 100' NO PARKING ZONE IN THE CENTER OF THE BLOCK IS REQUIRED FOR EMERGENCY VEHICLE ACCESS (EDDS 4C.070)

SEE STANDARD DRAWING 4-6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

ADT 0-500
# Dimensions = Feet

<table>
<thead>
<tr>
<th>NUMBER OF LANES</th>
<th>EASEMENT</th>
<th>SIDEWALK</th>
<th>PLANTING</th>
<th>PARKING</th>
<th>LANE</th>
<th>R/W BEHIND SIDEWALK</th>
<th>CURB</th>
<th>CLEAR ZONE</th>
<th>RIGHT OF WAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 LANE</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td>H</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>5</td>
<td>8</td>
<td>13</td>
<td>1</td>
<td>0.5</td>
<td>4</td>
<td>48</td>
<td></td>
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</tbody>
</table>

A = PRIVATE UTILITY EASEMENT

SEE STANDARD DRAWING 4–6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

| ADT | 0–500 |
DIMENSIONS = FEET

<table>
<thead>
<tr>
<th>NUMBER OF LANES</th>
<th>EASEMENT</th>
<th>R/W BEHIND SIDEWALK</th>
<th>SIDEWALK</th>
<th>SWALE*</th>
<th>PARKING</th>
<th>LANE</th>
<th>CURB</th>
<th>PLANTING</th>
<th>TREE SETBACK</th>
<th>CLEAR ZONE</th>
<th>RIGHT OF WAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 LANES</td>
<td>A 10</td>
<td>B 1</td>
<td>C 5</td>
<td>D 12</td>
<td>E 7</td>
<td>F 0.5</td>
<td>G 4</td>
<td>H 2</td>
<td>I 3</td>
<td>J 48</td>
<td></td>
</tr>
</tbody>
</table>

SEE STANDARD DRAWING 4-6A FOR MINIMUM STRUCTURAL DESIGN AND STREET CROSS SLOPE DESIGN

SEE MINIMUM STREET DESIGN STANDARDS TABLE FOR ADDITIONAL DESIGN ELEMENTS

* SEE STANDARD DRAWING 5-14 & 5-15 FOR LID SWALE DETAILS

A1 = PRIVATE UTILITY EASEMENT

ADT 0-500
COMMUTER MULTI-USE

NEIGHBORHOOD CONNECTOR

RECREATIONAL PEDESTRIAN

NOTES:
1. SEE EDDS SECTION 4E FOR DETAILED DESCRIPTION AND DESIGN STANDARDS TABLE.
2. AREAS DISTURBED BY CONSTRUCTION AND WHERE TOP SOIL IS PLACED SHALL BE RE-SEEDED WITH GRASS FOR RESTORATION.
NOTE:
1. SEE STANDARD DRAWING NO. 4–6A FOR PAVEMENT SECTIONS.
2. DRAINAGE DESIGN WILL BE REQUIRED.
TYPICAL SLAB CROSS SECTION

THIS HALF OF DOWEL SHALL BE DEBONDED

DOWEL SOCKET OR EXPANSION JOINT

1/4"X1-1/2" Poured Rubber Joint Sealer as per Section 9-4 of the WSDOT Standard Specifications

TYPICAL CONSTRUCTION JOINT

1/4"X10-1/2" Premolded Joint Filler

(3) 1-1/4"Dia X 24" Epoxy Coated Bars

Joints 15' on Center unless otherwise approved.
NOTES:
1. INTERSECTION "T" PERMITTED ONLY IN SINGLE FAMILY DEVELOPMENTS AND ON DEDICATED RIGHT-OF-WAY. THE "T" SEGMENT ORIENTATION MAY VARY TO MATCH LOCAL CONDITION.
2. THE TEMPORARY TEE CONFIGURATION MAY ONLY BE USED UPON WRITTEN APPROVAL FROM THE PUBLIC WORKS DEPARTMENT.
3. CUL-DE-SACS AND INTERSECTION "T" MUST BE FREE OF OBSTRUCTIONS AND SIGNED "NO PARKING ANY TIME".
4. R/W IS DEPENDENT UPON ROADWAY WIDTH REQUIREMENTS.
5. TRAFFIC ISLAND IS REQUIRED WITH CUL-DE-SAC CONSTRUCTION.

LEGEND:

\[ R/W \] DEDICATED RIGHT-OF-WAY

\[ PAVING \]

DEPicts THE TEMPORARY "T" CONFIGURATION

<table>
<thead>
<tr>
<th>APPROVED BY</th>
<th>REVISED DATE</th>
<th>CITY OF OLYMPIA</th>
<th>STD. DWG. NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRAN R. EIDE, PE</td>
<td>12/10/2015</td>
<td>CUL-DE-SAC OR TEMPORARY INTERSECTION &quot;T&quot;</td>
<td>4-5</td>
</tr>
<tr>
<td>CITY ENGINEER</td>
<td></td>
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</tr>
</tbody>
</table>
# Pavement Design Constants

<table>
<thead>
<tr>
<th></th>
<th>STD. DWG. 4-2A &amp; B</th>
<th>STD. DWG. 4-2A THRU 4-2G</th>
<th>STD. DWG. 4-2C THRU 4-2G</th>
<th>STD. DWG. 4-2H THRU 4-211</th>
<th>STD. DWG. 4-2J THRU 4-3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arterial</strong></td>
<td><strong>Industrial</strong></td>
<td><strong>Collector</strong></td>
<td><strong>Major</strong></td>
<td><strong>Neighborhood</strong></td>
<td><strong>Local Access &amp; Commercial Alleys</strong></td>
</tr>
<tr>
<td><strong>AADT</strong></td>
<td>14,000–40,000</td>
<td>3,000–14,000</td>
<td>3,000–14,000</td>
<td>500–3,000</td>
<td>0–500</td>
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<tr>
<td><strong>% AADTT</strong></td>
<td>8</td>
<td>15</td>
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<td>5</td>
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<tr>
<td><strong>Growth Rate</strong></td>
<td>5</td>
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<td><strong>Lane Factor</strong></td>
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<td><strong>Design EAL</strong></td>
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<td><strong>S_d</strong></td>
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<tr>
<td><strong>P_l</strong></td>
<td>4.20</td>
<td>4.20</td>
<td>4.20</td>
<td>4.20</td>
<td>4.20</td>
</tr>
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<td><strong>P_t</strong></td>
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<td>2.3</td>
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<td><strong>ΔPSI</strong></td>
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<td>1.8</td>
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</table>

## Minimum Pavement Section Without Pavement Design (See Note 3)

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>AC</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>CSTC</strong></td>
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<td>2&quot;</td>
<td>2&quot;</td>
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</tr>
<tr>
<td><strong>Gravel Base</strong></td>
<td>25&quot;</td>
<td>28&quot;</td>
<td>25&quot;</td>
<td>16&quot;</td>
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<tr>
<td><strong>Ballast</strong></td>
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## Minimum Pavement Section With Pavement Design (See Note 3)

<table>
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<tr>
<th></th>
<th>4&quot;</th>
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<tbody>
<tr>
<td><strong>AC</strong></td>
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<tr>
<td><strong>CSTC</strong></td>
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<tr>
<td><strong>Gravel Base</strong></td>
<td>6&quot;</td>
<td>10&quot;</td>
<td>6&quot;</td>
<td>6&quot;</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

**Note:**

1. Use 2% street cross slope and no more than 33 feet of roadway sloped in any direction.
2. Inverted crown may be allowed in boulevard street sections upon prior approval by city.
3. Pavement design is per AASHTO design guidelines and certified California bearing ratio (CBR) soils tests. See standard drawing 4-6B for pavement design worksheet.
PAVEMENT DESIGN – AASHTO METHOD

SEE PREVIOUS PAGE FOR INPUT IN DOUBLE BOXES (□)  SOIL TEST RESULTS MUST BE SUBMITTED WITH THIS WORKSHEET.

STREET CLASSIFICATION: ______________________

INITIAL AADT: ________  % OF AADTT: ________

GROWTH RATE: ________

DESIGN LIFE: 20 YEARS

DESIGN (EAL): ________

RELIABILITY LEVEL (R%): ________  STANDARD DEVIATION (S₀): ________

INITIAL SERVICEABILITY INDEX (Pi): 4.2

TERMINAL SERVICEABILITY INDEX (Pt):

Δψ = Pi - Pt = 4.2 - ________ = ________

SUBGRADE: Mr = 1500 x CBR*

CBR VALUE* FROM SOIL TEST = ________ => Mr ________ psi

USING AASHTO DESIGN METHOD: ** SN = ________, PROVIDE NOMOGRAPH OR CALCULATIONS.

\[
SN = (A_1 D_1) + (A_2 D_2) + (A_3 D_3) + (A_4 D_4)
\]

STRUCTURAL COEFFICIENT: CLASS B ASPHALT CONCRETE

ASPHALT TREATED BASE

CSTC OR CSBC

BALLAST

A₁ = 0.42

A₂ = 0.34

A₃ = 0.14

A₄ = 0.10

* AASHTO T193: THE CALIFORNIA BEARING RATIO

ASTM D1883: BEARING OF LABORATORY COMPACTED SOILS

** AASHTO GUIDE FOR DESIGN OF PAVEMENT STRUCTURES

APPROVED BY: Fran R. Eide, PE

REVISION DATE: 9/1/2015

CITY OF OLYMPIA

CITY ENGINEER

PAVEMENT DESIGN WORKSHEET

4-6B
NOTES:
1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15' MAXIMUM SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.
2. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE PLACING CONCRETE.
3. BROOM FINISH LONGITUDINALLY WITH LIGHT BROOM FINISH INCLUDING CURB FACE.
4. DRIVEWAY APPROACHES SHALL BE REINFORCED WITH WELDED-WIRE FABRIC (WWF).
5. USE STANDARD DRAWING 4-14 UNLESS MATCHING EXISTING GUTTER. DO NOT INSTALL GUTTER ON ARTERIALS, MAJOR COLLECTORS OR WHERE BICYCLE LAKES ARE PRESENT OR PLANNED.
NOTES:
1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15' MAXIMUM SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.
2. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE PLACING CONCRETE.
3. BROOM FINISH LONGITUDINALLY WITH LIGHT BROOM FINISH INCLUDING CURB FACE.
4. DRIVEWAY APPROACHES SHALL BE REINFORCED WITH WELDED-WIRE FABRIC (WWF).
5. USE STANDARD DRAWING 4-14 UNLESS MATCHING EXISTING GUTTER. DO NOT INSTALL GUTTER ON ARTERIALS, MAJOR COLLECTORS OR WHERE BICYCLE LANES ARE PRESENT OR PLANNED.

CITY OF OLYMPIA

APPROVED BY
FRAN R. EIDE, PE
CITY ENGINEER

REVISED DATE
9/9/16

Cement Concrete Driveway Entrance Type 2

STD. DWG. NO.
4-7B
NOTES:
1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15' MAXIMUM SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.
2. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE PLACING CONCRETE.
3. BROOM FINISH LONGITUDINALLY WITH LIGHT BROOM FINISH INCLUDING CURB FACE.
4. SIDEWALK WIDTH VARIES. SEE CHAPTER 4, 4-2 SERIES OF DRAWINGS FOR APPROPRIATE SIDEWALK WIDTH.
5. USE STANDARD DRAWING 4-14 UNLESS MATCHING EXISTING GUTTER. DO NOT INSTALL GUTTER ON ARTERIALS, MAJOR COLLECTORS OR WHERE BICYCLE LANES ARE PRESENT OR PLANNED.
6. DRIVEWAY APPROACHES SHALL BE REINFORCED WITH WELDED-WIRE FABRIC (WWF).
NOTES:
1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15' MAXIMUM SPACING WHEN DRIVEWAY WIDTHS EXCEED 30'.
2. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE PLACING CONCRETE.
3. BROOM FINISH LONGITUDINALLY WITH LIGHT BROOM FINISH INCLUDING CURB FACE.
4. USE STANDARD DRAWING 4–14 UNLESS MATCHING EXISTING GUTTER. DO NOT INSTALL GUTTER ON ARTERIALS, MAJOR COLLECTORS OR WHERE BICYCLE LANES ARE PRESENT OR PLANNED.
5. DRIVEWAY APPROACHES SHALL BE REINFORCED WITH WELDED–WIRE FABRIC (WWF).
NOTES:
1. SEE CONTRACT PLANS FOR THE DRIVEWAY ENTRANCE SPECIFIED. SEE OLYMPIA STANDARD DRAWINGS 4–14 (SERIES) FOR TRAFFIC CURB, CURB AND GUTTER, AND PEDESTRIAN CURB DETAILS.
2. SEE OLYMPIA STANDARD DRAWINGS 4–9 (SERIES), 4–10 FOR SIDEWALK DETAILS. SEE CONTRACT PLANS FOR WIDTH AND PLACEMENT OF SIDEWALK.
3. THE BID ITEM "CEMENT CONCRETE DRIVEWAY ENTRANCE" DOES NOT INCLUDE THE ADJACENT CURB, CURB AND GUTTER, PEDESTRIAN CURB OR SIDEWALKS.
4. SHADED AREA SHOWN SHALL BE CONSTRUCTED OF IMPERVIOUS CONCRETE. OTHER AREAS SHALL BE CONSTRUCTED AS SHOWN ON PLAN.
5. PAY LIMITS ARE APPLICABLE ONLY FOR PUBLIC WORKS PROJECTS.
NOTE:
1. ALL APPROACHES SHALL BE INSTALLED WITH A STRUCTURAL CROSS SECTION THAT MATCHES THE SECTION OF THE CONNECTING DRIVEWAY/STREET. GRAVEL DRIVEWAY/STREET APPROACHES SHALL BE PAVED (2" MIN).
2. WHERE LARGER TRUCK TURNING MOVEMENTS ARE ENCOUNTERED, LARGER RETURN RADII AND RIGHT TURN TAPERS MAY BE REQUIRED. RADIUS AND TAPERS SHALL BE APPROVED BY THE CITY ENGINEER.
3. ALL APPROACHES ARE SYMMETRIC ABOUT CENTERLINE UNLESS OTHERWISE NOTED.
4. CULVERTS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION 4B.140 OF THE EDDS.
**Saw Cut or Equal Cut (No Jack Hammering) to be Uniform and Vertical. Emulsified Asphalt Grade CSS-1 Tack Shall Be Applied to Edges of Existing Pavement. All Joints Shall Be Sealed Using Paving Asphalt AR4000W.**

**Maximum Patch Width Shall Be 2' Plus Trench Width or 3', Whichever Is Greater (Typ.)**

**See Standard Drawing 4-BA for Restoration**

**Existing A.C. Pavement**

**Bank Run Gravel or Control Density Fill for Trench Backfill and Pipe Zone Backfill**

**Foundation Typical Required Only When Unsuitable Materials Are Encountered and as the Engineer Directs**

**Maximum Trench Width Shall Be 1.5' Plus 1-1/2 Times Outside Diameter of Pipe or 2.5', Whichever Is Greater (Typical)**

**Concrete and Ductile Iron Pipe**

**Thermoplastic Pipe**

**Metal Pipe**

---

**Notes:**

1. All materials except A.C.P. and bedding materials shall be compacted in 6-inch maximum lifts to 95% density.

2. Pipe zone bedding shall conform to Section 9-03.12(3) of WSDOT/APWA standard specifications except 100% shall pass 1”.

3. Compaction: bedding and backfill within the pipe zone shall be compacted to 95% max. as determined by ASTM D1557. Backfill above the pipe zone shall be compacted to 85% in unpaved areas, and 95% in paved or shoulder areas as determined by ASTM D1557.

4. All materials, workmanship, and installation shall be in conformance with the most current WSDOT standard specifications as amended by the City of Olympia Public Works Standards.

5. For longitudinal trench cuts within travel lane, City requires minimum of one lane overlay in addition to trench patch detail for concrete and asphalt roadways. Additional overlay may be required depending on location and trenching width. See Section 48.180 Trench Backfill and 48.175 Pavement restoration for detail requirements.

---

**Approved by:**

Fran R. Eide, PE

**Revised Date:**

9/1/2015

**City of Olympia**

**City Engineer**

**STD. DWG. NO.:**

4-8

**Trench-Pavement Restoration Detail**
EXISTING A.C. (SEE STANDARD PLAN 4-8)

UNDISTURBED EARTH

0.67' GRAVEL BASE

SEE STANDARD DRAWING 4-8 FOR BACKFILL

MINIMUM 0.25' HMA (COMPACTED DEPTH), EXISTING PLUS 0.08', OR STANDARD DRAWING 4-6A, WHICHEVER IS GREATER.

0.17' CRUSHED SURFACING TOP COURSE

CASE 1: WITHOUT BASE

EXISTING BASE/CTB/BRICKS

UNDISTURBED EARTH

0.67' MIN GRAVEL BASE OR MATCH EXISTING PLUS 0.08', WHICHEVER IS GREATER. CONTROL DENSITY FILL MAY BE USED IN LIEU OF GRANULAR BASE MATERIAL WHERE TRENCH WIDTH IS NO GREATER THAN 3' AND IS ADJACENT TO CONCRETE TREATED BASE AND BRICKS, AS DIRECTED BY THE ENGINEER.

0.17' CRUSHED SURFACING TOP COURSE

SEE STANDARD DRAWING 4-8 FOR BACKFILL

CASE 2: WITH BASE

EXISTING A.C. (SEE STANDARD PLAN 4-8)

EXISTING PCC PAVEMENT

UNDISTURBED EARTH

SEE STANDARD DRAWING 4-8 FOR BACKFILL

HMA PAVEMENT MATCH EXISTING DEPTH

SEE STANDARD DRAWING 4-8B

0.83' MINIMUM, OR EXISTING PLUS 0.08', WHICHEVER IS GREATER. PCC 3 DAY MIX CLASS 1 CEMENT UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DOWELS AND TIE BARS ARE REQUIRED.

CASE 3: WITH AC PAVEMENT ON PCC PAVEMENT

NOTES:
1. WHEN CUT LINE IS LESS THAN THREE FEET FROM A CUT LINE, CURB OR PAVEMENT EDGE, THE EXISTING PAVEMENT SHALL BE REMOVED TO THE CUT LINES.

APPROVED BY: FRAN R. EIDE, PE
REVISED DATE: 9/1/2015
CITY OF OLYMPIA: PAVEMENT REPLACEMENT
STD. DWG. NO: 4-8A
CITY ENGINEER
NOTES:
1. THE EXTENT OF REPAIR OF CONCRETE CUTS NOT SHOWN ON THIS STANDARD OR FOR CUTS MADE WITHIN THREE FEET OF EXISTING PATCHES, CRACKS OR DETERIORATED SLABS SHALL BE DETERMINED BY THE ENGINEER.
2. ALL TRANSVERSE AND LONGITUDINAL JOINTS AND OUTER EDGES OF THE PAVEMENT WHICH ARE PART OF THE REPLACED CONCRETE SHALL BE EDGED WITH AN EDGING TOOL HAVING A RADIUS OF 0.25 INCH.
3. REPLACED CONCRETE THAT JOINS A SAWED EDGE OF THE EXISTING PAVEMENT SHALL NOT BE EDGED.
4. REPLACED CONCRETE SHALL BE FINISHED TO THE SAME SURFACE TEXTURE AS THAT OF ADJACENT EXISTING CONCRETE.
5. ALL PAVEMENT REMOVALS SHALL BE MADE ON STRAIGHT LINE SAW CUTS A MINIMUM OF 1.5 INCHES DEEP. IF CUT LINE IS LESS THAN THREE FEET FROM A CUT LINE, EXPANSION JOINT OR EDGE, THE EXISTING PAVEMENT SHALL BE REMOVED TO THOSE CUT LINES, EXPANSION JOINT OR EDGE OR AS DIRECTED BY THE ENGINEER.
6. DURING EXCAVATION AND SUBGRADE PREPARATION, THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO INSURE THE PROTECTION OF ALL UTILITIES AND ADJACENT PAVEMENT SECTIONS.
7. TIE BARS AND DOWELS PER WSDOT STANDARD SPECIFICATIONS 5-05.3(10).
8. JOINTS PER WSDOT STANDARD SPECIFICATION 5-05.3(8).
EDGE OF PAVEMENT, FACE OF CURB, OR EDGE OF EXISTING PAVEMENT CUT

CENTERLINE OR LANE EDGE

OBlique ANGLE CUT SHALL BE SQUARED OFF AND SAWCUTS PERPENDICULAR AND PARALLEL TO CENTER LINE

CENTERLINE, LANE EDGE, OR END OF PAVING

NEW OVERLAY

.17"

VARIABLE

.17"

6' MIN. TO MATCH PAVEMENT ENDS 2' MIN. AT CENTERLINE, LANE EDGE, OR AS DIRECTED BY THE CITY ENGINEER.

LEGEND

EXCAVATION

AREA OF PAVEMENT TO BE REPLACED

SAW CUT

PAVEMENT CROSS SECTION

END OF PAVING GRINDING DETAIL

NOTES:
1. THE EXTENT OF REPAIR OF ASPHALT CUTS NOT SHOWN ON THIS STANDARD OR FOR CUTS MADE WITHIN THREE FEET OF EXISTING PATCHES, CRACKS OR DETERIORATED PAVEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PERFORMED PER THE SUBMITTED RESTORATION/PAVEMENT DESIGN.
2. ALL PAVEMENT REMOVALS SHALL BE MADE ON STRAIGHT LINE SAW CUTS. IF CUT LINE IS LESS THAN THREE FEET FROM A CUT LINE, EXPANSION JOINT OR EDGE, THE EXISTING PAVEMENT SHALL BE REMOVED TO THOSE CUT LINES, EXPANSION JOINT OR EDGE OR AS DIRECTED BY THE ENGINEER.
3. DURING EXCAVATION AND SUBGRADE PREPARATION, THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO INSURE THE PROTECTION OF ALL UTILITIES AND ADJACENT PAVEMENT SECTIONS.
4. AC PATCH SHALL BE A MINIMUM OF 4" OR AS DIRECTED BY THE ENGINEER (EXCLUDING OVERLAY).
5. GRIND 2" MINIMUM OF ONE LANE WIDTH. SEE TABLE III (PAVEMENT RESTORATION REQUIREMENTS, PAGE 4-26 FOR ADDITIONAL RESTORATION REQUIREMENTS).
GRAVEL BACKFILL FOR DRAINS, PER WSDOT 9–03.12(4), THICKNESS PER STANDARD DRAWING 4–9B.

FOR CURB USE STANDARD DRAWING 4–14

NOTES:
1. FOR JOINTS AND SCORING, SEE OLYMPIA STANDARD DRAWING 4–10.
2. CONCRETE DRIVEWAYS REQUIRE A MINIMUM DEPTH OF 9”.
3. WHEN CHECKED WITH A 10 FOOT STRAIGHTEDGE, GRADE SHALL NOT DEVIATE MORE THAN 1/8 INCH, AND ALIGNMENT SHALL NOT VARY MORE THAN 1/4 INCH.
1/2" WASHED ROUND ROCK

12"

BERM

15' ON CENTER (TYP)

TOP SOIL/GRASS SHALL BE 1" BELOW NEW SIDEWALK SURFACE

CONSTRUCTION GEOTEXTILE FOR PERVIOUS CONCRETE UNDERDRAIN SYSTEM (9-33)

GRAVEL BACKFILL THICKNESS

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<td>9</td>
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NOTES:
1. NATIVE MATERIAL AND/OR FILL MATERIAL COMPACTED TO 5% OF MAXIMUM. TOP OF BERM ONLY.
2. OPTIONAL EXCAVATION IF CONTRACTOR PREFERS TO EXCAVATE LEVEL. OPTIONAL EXCAVATION AND GRAVEL BACKFILL WILL BE AT CONTRACTORS EXPENSE.
3. NO COMPACITION OF NATIVE MATERIALS OUTSIDE OF BERMS.
* FOR USE ONLY WITH A WRITTEN DEVIATION APPROVAL FROM THE CITY ENGINEER

VARIATES SIDEWALK

3/8" EXPANSION JOINT – 1/2" RADIUS

FOR CURB USE STANDARD DRAWING 4–14

2" CRUSHED SURFACING TOP COURSE OR WELL GRADED SAND

VARIATES SIDEWALK

PLANTER STRIP AS REQUIRED

FOR CURB USE STANDARD DRAWING 4–14

2" CRUSHED SURFACING TOP COURSE OR WELL GRADED SAND

NOTES:
1. FOR JOINTS AND SCORING, SEE OLYMPIA STANDARD DRAWING 4–10.
2. CONCRETE DRIVEWAYS REQUIRE A MINIMUM DEPTH OF 9".
3. WHEN CHECKED WITH A 10 FOOT STRAIGHTEDGE, GRADE SHALL NOT DEVIATE MORE THAN 1/8 INCH, AND ALIGNMENT SHALL NOT VARY MORE THAN 1/4 INCH.

APPROVED BY: FRAN R. EIDE, PE

REVISED DATE: 12/17/2015

CITY OF OLYMPIA

IMPERMEABLE CONCRETE SIDEWALK *

STD. DWG. NO.: 4–9C
NORMAL CURB
HEIGHT = 6"
BATTER = 1:6

3/8" EXPANSION MATERIAL THRU JOINTS SHALL BE PLACED AT 90° TO FACE OF CURB AND NO MORE THAN 25 FT. APART.

ROADWAY

WIDTH VARIES, SLOPE 0.02'/FT.

1/2" RADIUS (TYP)

BROOM FINISH

90°

1/4" RADIUS (TYP)

1/2" EXPANSION MATERIAL WHERE ABUTTING EXIST. STRUCTURES (TYP)

2" CRUSHED SURFACING TOP COURSE

NOTES:
1. BROOM FINISH SHALL BE PERPENDICULAR TO FACE OF CURB.
2. JOINTS SHALL BE TROWEL FINISHED, AFTER BROOMING.
3. INTEGRAL CURB AND WALK SHALL BE USED ONLY IN "IN-FILL" TYPE SITUATIONS WHERE NEEDED TO MATCH EXISTING IMPROVEMENTS.
4. ALL EDGES AND JOINTS SHALL BE FINISHED.
5. WHEN CHECKED WITH A 10 FOOT STRAIGHTEDGE, GRADE SHALL NOT DEVIATE MORE THAN 1/8 INCH, AND ALIGNMENT SHALL NOT VARY MORE THAN 1/4 INCH.
NOTES:
1. INTEGRAL CURB AND WALK DRIVEWAY SHALL BE USED ONLY IN "IN-FILL" TYPE SITUATIONS WHERE NEEDED TO MATCH EXISTING INTEGRAL CURB AND WALK.
2. WHERE D/W EXCEEDS 16" WIDTH AN EXPANSION JOINT SHALL BE PLACED TRANSVERSALLY, CENTERED IN DRIVEWAY.
3. EXPANSION JOINT MATERIAL TO BE 3/8" THICK PREMOLDED JOINT FILLER FULL THICKNESS,
4. TRANSITION WIDTH WILL VARY DEPENDING ON DRIVEWAY SLOPE. MAINTAIN 12:1 TRANSITION SLOPE.
5. BROOM FINISH LONGITUDINALLY WITH LIGHT BROOM FINISH INCLUDING CURB FACE.
6. WHEN CHECKED WITH A 10 FOOT STRAIGHTEDGE, GRADE SHALL NOT DEVIATE MORE THAN 1/8 INCH, AND ALIGNMENT SHALL NOT VARY MORE THAN 1/4 INCH.
NOTES:
1. EXPANSION JOINT MATERIAL TO BE 3/8" THICK PREMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE.
2. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE POURING CONCRETE.
3. SCORE MARKS SHALL BE ±1/8" WIDE BY ±1/4" DEEP. FOR SIDEWALKS OVER 8' IN WIDTH, A LONGITUDINAL SCORE MARK SHALL BE MADE ALONG CENTER OF WALK.
4. EXPANSION JOINTS SHALL BE INSTALLED IN CURB AND GUTTER AND IN SIDEWALK AT PC AND PT AT ALL CURB RETURNS. EXPANSION JOINTS SHALL BE PLACED IN SIDEWALK AT SAME LOCATIONS AS IN CURB AND GUTTER WHEN SIDEWALK IS ADJACENT TO CURB AND GUTTER, UNLESS OTHERWISE DIRECTED BY ENGINEER.
NOTES:
1. ACCESS RAMPS SHOULD BE CONSTRUCTED TO MINIMIZE PEDESTRIAN CROSSING DISTANCES, AND POSITION PEDESTRIANS WHERE THEY CAN BEST BE SEEN BY ONCOMING TRAFFIC. CURB RAMP ORIENTATION WILL ALIGN PEDESTRIANS PARALLEL WITHIN THE LATERAL EXTENSION LINES OF THE SIDEWALK. INTERSECTION RADIUS LESS THAN 35’ WILL USE TWO PERPENDICULAR CURB ACCESS RAMPS PER CORNER. WHERE INTERSECTION CORNERS ARE OFF-SET, CURB ACCESS RAMPS WILL ORIENTATE DIAGONALLY TO THE OPPOSING CURB ACCESS RAMP. LANDINGS BETWEEN ACCESS RAMPS WILL NOT BE LESS THAN 5’ WITH A SLOPE NO GREATER THAN 2.0% CENTER AND DIRECTION OF RAMP SHALL BE LOCATED WITHIN CROSSWALK LINES AS CLOSE AND PARALLEL TO CROSSWALK CENTERLINE AS POSSIBLE. SEE OLYMPIA STANDARD DRAWING 4–32.
3. PLACED JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN CURB RAMP SHALL BE ADA COMPLIANT. DO NOT PLACE GRATING IN FRONT OF OR IN ANY PART OF THE CURB RAMP OR LANDING.
4. CURB RAMP LANDING, AND FLARES SHALL RECEIVE BROOM FINISH. SEE WSDOT STANDARD SPECIFICATIONS 8–14.
5. CURB RAMP WIDTH AND LANDINGS MAY BE REDUCED TO 4’–0” WITH APPROVAL FROM CITY ENGINEER.
6. USE OLYMPIA STANDARD DRAWING 4–14 WHEN BICYCLE LANE IS PRESENT OR PLANNED; OLYMPIA STANDARD DRAWING 4–14A WHEN BICYCLE LANE IS NOT PRESENT OR PLANNED.
7. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE. CURB RAMP SLOPE INCLUDING TOLERANCE NOT TO EXCEED 8.3%.

CITY OF OLYMPIA

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<th>STD. DWG. NO.</th>
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<td>12/11/2015</td>
<td>4–12A</td>
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PERPENDICULAR CURB RAMP
TYPE A
NOTES:
1. ACCESS RAMPS SHOULD BE CONSTRUCTED TO MINIMIZE PEDESTRIAN CROSSING DISTANCES, AND POSITION PEDESTRIANS WHERE THEY CAN BEST BE SEEN BY ONCOMING TRAFFIC. CURB RAMP ORIENTATION WILL ALIGN PEDESTRIANS PARALLEL WITHIN THE LATERAL EXTENSION LINES OF THE SIDEWALK. INTERSECTION RADIUS LESS THAN 35' WILL USE TWO PERPENDICULAR CURB ACCESS RAMPS PER CORNER. WHERE INTERSECTION CORNERS ARE OFF-SET, CURB ACCESS RAMPS WILL ORIENTATE DIAGONALLY TO THE OPPOSING CURB ACCESS RAMP. LANDING BETWEEN ACCESS RAMPS WILL NOT BE LESS THAN 5' WITH A SLOPE NO GREATER THAN 2.0%. CENTER AND DIRECTION OF RAMP SHALL BE LOCATED WITHIN CROSSWALK LINES AS CLOSE AND PARALLEL TO CROSSWALK CENTERLINE AS POSSIBLE. SEE OLYMPIA STANDARD DRAWING 4–32.
3. PLACED JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTEANCES IN CURB RAMP SHALL BE ADA COMPLIANT. DO NOT PLACE GRATING IN FRONT OF OR IN ANY PART OF THE CURB RAMP OR LANDING.
4. CURB RAMP LANDING, AND FLARES SHALL RECEIVE BROOM FINISH. SEE WSDOT STANDARD SPECIFICATIONS 8–14.
5. CURB RAMP WIDTH AND LANDINGS MAY BE REDUCED TO 4′–0″ WITH APPROVAL FROM CITY ENGINEER.
6. USE OLYMPIA STANDARD DRAWING 4–14 WHEN BICYCLE LANE IS PRESENT OR PLANNED; OLYMPIA STANDARD DRAWING 4–14A WHEN BICYCLE LANE IS NOT PRESENT OR PLANNED.
7. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE. CURB RAMP SLOPE INCLUDING TOLERANCE NOT TO EXCEED 8.3%.

APPROVED BY
FRAN R. EIDE, PE  12/11/2015
CITY ENGINEER

REvised DATE
12/11/2015

CITY OF OLYMPIA
PERPENDICULAR CURB RAMP
TYPE B (SHOWN WITH BUFFER)

STD. DWG. NO.
4–12B
LEGEND

- **Curb Ramp Width 5'-0" (Typical) Landing to Match Curb Ramp Width, See Note 5**
- **Grade Break (Typical)**
- **Slope In Either Direction**
- **Detachable Warning Surface, See WSDOT Standard Plan F-45.10-01**
- **Concrete Traffic Curb**
- **Depressed Traffic Curb**
- **Detectable Warning Surface, See WSDOT Standard Plan F-45.10-01**
- **Cement Concrete**
- **Top of Roadway**
- **Depressed Curb**
- **Counter Slope 5.0% Maximum**
- **Clear Space at 2% Maximum**
- **Varies (3'-0" Maximum)**
- **Varies to 15'-0" Maximum**
- **See Note 7**
- **See Note 5**
- **5'-0" Minimum**
- **Landing 2.0% Maximum**
- **Grade Break 7.5% Maximum**
- **Landing ~ 2% Maximum**
- **Crosswalk**
- **Face of Curb**
- **Grade Break**
- **Curb Ramp 4" Typical**
- **Section A-A**

**NOTES:**

1. **Access Ramps Should be Constructed to Minimize Pedestrian Crossing Distances, and Position Pedestrians Where They Can Best Be Seen by Oncoming Traffic. Curb Ramp Orientation Will Align Pedestrians Parallel Within the Lateral Extension Lines of the Sidewalk. Intersection Radius Less Than 35' Will Use Two Perpendicular Curb Access Ramps Per Corner. Where Intersection Corners Are Off-Set, Curb Access Ramps Will Orientate Diagonally to the Opposing Curb Access Ramp. Landing Between Access Ramps Will Not Be Less Than 5' With a Slope No Greater Than 2.0%. Center and Direction of Ramp Shall Be Located Within Crosswalk Lines as Close and Parallel to Crosswalk Centerline as Possible. See Olympia Standard Drawing 4-32.**

2. **Grade Breaks at the Top and Bottom of the Curb Ramp Will Be Perpendicular to the Direction of the Ramp. Any Triangle Landing Between the Grade Break and the Curb Will Be 2.0% Maximum Slope. The Entire Length of the Grade Break Between the Two Adjacent Surface Planes Shall Be Flush.**

3. **Placed Junction Boxes, Access Covers, or Other Appurtenances in Curb Ramp Shall Be ADA Compliant. Do Not Place Grating in Front of or in Any Part of the Curb Ramp or Landing.**

4. **Curb Ramp Landing, and Flares Shall Receive Broom Finish. See WSDOT Standard Specifications 8-14.**

5. **Curb Ramp Width and Landings May Be Reduced to 4'-0" With Approval From City Engineer.**

6. **Use Olympia Standard Drawing 4-14 When Bicycle Lane Is Present or Planned; Olympia Standard Drawing 4-14A When Bicycle Lane Is Not Present or Planned.**

7. **The Curb Ramp Maximum Running Slope Shall Not Require the Ramp Length to Exceed 15 Feet to Avoid Chasing the Slope Indefinitely When Connecting to Steep Grades. When Applying the 15 Foot Maximum Length the Running Slope of the Curb Ramp Shall Be as Flat As Feasible. Curb Ramp Slope Including Tolerance Not to Exceed 8.3%.**

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<td>Perpendicular Curb Ramp</td>
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<tr>
<td>City Engineer</td>
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NOTES:

1. Access ramps should be constructed to minimize pedestrian crossing distances, and position pedestrians where they can best be seen by oncoming traffic. Curb ramp orientation will align pedestrians parallel within the lateral extension lines of the sidewalk. Intersection radius less than 35’ will use two perpendicular curb access ramps per corner. Where intersection corners are off-set, curb access ramps will orientate diagonally to the opposing curb access ramp. LANDING BETWEEN ACCESS RAMPS WILL NOT BE LESS THAN 5’ WITH A SLOPE NO GREATER THAN 2.0% CENTER AND DIRECTION OF RAMP SHALL BE LOCATED WITHIN CROSSWALK LINES AS CLOSE AND PARALLEL TO CROSSWALK CENTERLINE AS POSSIBLE. SEE OLYMPIA STANDARD DRAWING 4–32.

2. Grade breaks at the top and bottom of the curb ramp will be perpendicular to the direction of the ramp. Any triangle landing between the grade break and the curb will be 2.0% maximum slope. The entire length of the grade break between the two adjacent surface planes shall be flush.

3. Placed junction boxes, access covers, or other appurtenances in curb ramp shall be ADA compliant. Do not place grating in front of or in any part of the curb ramp or landing.


5. Curb ramp width and landings may be reduced to 4”–0” with approval from city engineer.

6. Use Olympia Standard Drawing 4–14 when bicycle lane is present or planned; Olympia Standard Drawing 4–14A when bicycle lane is not present or planned.

7. The curb ramp maximum running slope shall not require the ramp length to exceed 15 feet to avoid chasing the slope indefinitely when connecting to steep grades. When applying the 15 foot maximum length the running slope of the curb ramp shall be as flat as feasible. Curb ramp slope including tolerance not to exceed 8.3%.
NOTES:
1. ACCESS RAMPS SHOULD BE CONSTRUCTED TO MINIMIZE PEDESTRIAN CROSSING DISTANCES, AND POSITION PEDESTRIANS WHERE THEY CAN BEST BE SEEN BY ONCOMING TRAFFIC. CURB RAMP ORIENTATION WILL ALIGN PEDESTRIANS PARALLEL WITHIN THE LATERAL EXTENSION LINES OF THE SIDEWALK. INTERSECTION RADIUS LESS THAN 35’ WILL USE TWO PERPENDICULAR CURB ACCESS RAMPS PER CORNER. WHERE INTERSECTION CORNERS ARE OFF-SET, CURB ACCESS RAMPS WILL ORIENTATE DIAGONALLY TO THE OPPosing CURB ACCESS RAMPS. LANDING BETWEEN ACCESS RAMPS WILL NOT BE LESS THAN 5’ WITH A SLOPE NO GREATER THAN 2.0%. CENTER AND DIRECTION OF RAMP SHALL BE LOCATED WITHIN CROSSWALK LINES AS CLOSE AND PARALLEL TO CROSSWALK CENTERLINE AS POSSIBLE. SEE OLYMPIA STANDARD DRAWING 4-32.
3. PLACED JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN CURB RAMP SHALL BE ADA COMPLIANT. DO NOT PLACE GRATING IN FRONT OF OR IN ANY PART OF THE CURB RAMP OR LANDING.
4. CURB RAMP LANDING, AND FLARES SHALL RECEIVE BROOM FINISH. SEE WSDOT STANDARD SPECIFICATIONS B-14.
5. CURB RAMP WIDTH AND LANDINGS MAY BE REDUCED TO 4”-0” WITH APPROVAL FROM CITY ENGINEER.
6. USE OLYMPIA STANDARD DRAWING 4-14 WHEN BICYCLE LANE IS PRESENT OR PLANNED; OLYMPIA STANDARD DRAWING 4-14A WHEN BICYCLE LANE IS NOT PRESENT OR PLANNED.
7. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE. CURB RAMP SLOPE INCLUDING TOLERANCE NOT TO EXCEED 8.3%.
NOTES:

1. ACCESS RAMPS SHOULD BE CONSTRUCTED TO MINIMIZE PEDESTRIAN CROSSING DISTANCES, AND POSITION PEDESTRIANS WHERE THEY CAN BEST BE SEEN BY ONCOMING TRAFFIC. CURB RAMP ORIENTATION WILL ALIGN PEDESTRIANS PARALLEL WITHIN THE LATERAL EXTENSION LINES OF THE SIDEWALK. INTERSECTION RADIUS LESS THAN 35’ WILL USE TWO PERPENDICULAR CURB ACCESS RAMPS PER CORNER. WHERE INTERSECTION CORNERS ARE OFF-SET, CURB ACCESS RAMPS WILL ORIENTATE DIAGONALLY TO THE OPPosing CURB ACCESS RAMP. LANDING BETWEEN ACCESS RAMPS WILL NOT BE LESS THAN 5’ WITH A SLOPE NO GREATER THAN 2.0% CENTER AND DIRECTION OF RAMP SHALL BE LOCATED WITHIN CROSStWALK LINES AS CLOSE AND PARALLEL TO CROSStWALK CENTERLINE AS POSSIBLE. SEE OLYMPIA STANDARD DRAWING 4–32.


3. PLACED JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURtenANCES IN CURB RAMP SHALL BE ADA COMPLIANT. DO NOT PLACE GRATING IN FRONT OF OR IN ANY PART OF THE CURB RAMP OR LANDING.

4. CURB RAMPS, LANDING, AND FLARES SHALL RECEIVE BROOM FINISH. SEE WSDOT STANDARD SPECIFICATIONS 8–14.

5. CURB RAMP WIDTH AND LANDINGS MAY BE REDUCED TO 4’–0” WITH APPROVAL FROM CITY ENGINEER.

6. USE OLYMPIA STANDARD DRAWING 4–14 WHEN CYCLE LANE IS PRESENT OR PLANNED; OLYMPIA STANDARD DRAWING 4–14A WHEN CYCLE LANE IS NOT PRESENT OR PLANNED.

7. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE. CURB RAMP SLOPE INCLUDING TOLERANCE NOT TO EXCEED 8.3%.

APPROVED BY

FRAN R. EIDE, PE
CITY ENGINEER

REVISED DATE

12/11/2015

CITY OF OLYMPIA

COMBINATION CURB RAMP

STD. DWG. NO.

4–12F2
NOTES:

1. ACCESS RAMPS SHOULD BE CONSTRUCTED TO MINIMIZE PEDESTRIAN CROSSING DISTANCES, AND POSITION PEDESTRIANS WHERE THEY CAN BEST BE SEEN BY ONCOMING TRAFFIC. CURB RAMP ORIENTATION WILL ALIGN PEDESTRIANS PARALLEL WITHIN THE LATERAL EXTENSION LINES OF THE SIDEWALK. INTERSECTION RADIUS LESS THAN 35° WILL USE TWO PERPENDICULAR CURB ACCESS RAMPS PER CORNER. WHERE INTERSECTION CORNERS ARE OFF-SET, CURB ACCESS RAMPS WILL ORIENTATE DIAGONALLY TO THE OPPOSING CURB ACCESS RAMP. LANDING BETWEEN ACCESS RAMPS WILL NOT BE LESS THAN 5' WITH A SLOPE NO GREATER THAN 2.0% CENTER AND DIRECTION OF RAMP SHALL BE LOCATED WITHIN CROSSWALK LINES AS CLOSE AND PARALLEL TO CROSSWALK CENTERLINE AS POSSIBLE. SEE OLYMPIA STANDARD DRAWING 4–32.


3. PLACED JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN CURB RAMP SHALL BE ADA COMPLIANT. DO NOT PLACE GRATING IN FRONT OF OR IN ANY PART OF THE CURB RAMP OR LANDING.

4. CURB RAMP LANDING, AND FLARES SHALL RECEIVE BROOM FINISH. SEE WSDOT STANDARD SPECIFICATIONS 8–14.

5. CURB RAMP WIDTH AND LANDINGS MAY BE REDUCED TO 4′–0″ WITH APPROVAL FROM CITY ENGINEER.

6. USE OLYMPIA STANDARD DRAWING 4–14 WHEN BICYCLE LANE IS PRESENT OR PLANNED; OLYMPIA STANDARD DRAWING 4–14A WHEN BICYCLE LANE IS NOT PRESENT OR PLANNED.

7. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADIENTS. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE. CURB RAMP SLOPE INCLUDING TOLERANCE NOT TO EXCEED 8.3%.
NOTES:
1. SEE CONTRACT PLANS FOR THE CURB DESIGN SPECIFIED. SEE OLYMPIA STANDARD DRAWING 4–14 (SERIES) FOR TRAFFIC CURB, CURB AND GUTTER, AND PEDESTRIAN CURB DETAILS.
2. SEE OLYMPIA STANDARD DRAWINGS 4–9 (SERIES), 4–10 FOR SIDEWALK DETAILS. SEE CONTRACT PLANS FOR WIDTH AND PLACEMENT OF SIDEWALK.
3. THE BID ITEM "CEMENT CONC. CURB RAMP" DOES NOT INCLUDE THE ADJACENT CURB, CURB AND GUTTER, PEDESTRIAN CURB OR SIDEWALKS.
4. WHEN APPLYING THE 15’ MAXIMUM LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.
5. SHADED AREAS ALSO CORRESPOND TO LIMITS OF IMPERMEABLE CONCRETE MATERIAL.
6. PAY LIMITS ARE APPLICABLE ONLY FOR PUBLIC WORKS CONTRACTS.

APPROVED BY: FRAN R. EIDE, PE  REvised DATE: 12/14/2015  CITY OF OLYMPIA  CURB RAMP PAY LIMITS  STD. DWG. NO. 4–12H
NOTES:
1. SEE MINIMUM STREET DESIGN STANDARDS TABLE 1 FOR VEHICLE TURNING RADIUS DIMENSION PER FUNCTIONAL STREET CLASSIFICATION.
2. REFER TO ENGINEERING DEVELOPMENT DESIGN STANDARDS CHAPTER 4 TABLE 2, MINIMUM STREET DESIGN STANDARDS FOOTNOTE 7 FOR ADDITIONAL GUIDANCE ON TURNING RADIUS DESIGN.

R1 = CURB RADIUS
R2 = VEHICLE TURNING RADIUS
NOTES:
1. SAW CUT AND REMOVE EXISTING CONCRETE CURB OR SURFACE.
2. IF EXISTING STORM DRAINAGE LINE EXISTS INSTALL 12" STORM SEWER ON THE UPHILL SIDE OF ROUNDED CORNER AS NEEDED FOR DRAINAGE. MAINTAIN 2' MINIMUM COVER OVER PIPE. GRADE TO DRAIN.
3. IF NO STORM DRAINAGE LINE EXISTS INSTALL 12" STORM SEWER MAINTAIN 2' OF MINIMUM COVER OVER STORM SEWER PIPE. STORM PIPE SLOPE TO MATCH GUTTER GRADE.
4. CATCH BASIN TYPE 1L TYP. (SEE WSDOT STANDARD PLAN B-5.40-00) HOODED CATCH BASIN FRAME & GRATE (SEE CITY OF OLYMPIA STANDARD DRAWINGS 5-9 AND 5-9A).
5. CEMENT CONCRETE TRAFFIC CURB (SEE CITY OF OLYMPIA STANDARD DRAWING 4-14).
6. PERPENDICULAR CURB RAMP (SEE CITY OF OLYMPIA STANDARD DRAWING 4-12A OR 4-12C).
7. 1' DEEP TYPE C TOP SOIL FOR LANDSCAPING WHERE PLANTING STRIP IS REQUIRED.
8. RADIUS VARIES, SEE EDDS CHAPTER 4, TABLE 2 — INTERSECTION RADIUS. (MAY USE COMPOUND RADIUS.)
NOTES:
1. ALL RADIUS'S SHALL BE EQUAL AND TANGENT.
2. MINIMUM RADIUS IS 15 FT.
PAINT TRAFFIC ISLAND YELLOW W/GLASS BEADS (SEE MOUNTABLE CONCRETE TRAFFIC ISLAND DETAILS, CITY OF OLYMPIA STANDARD DRAWING 4–13D)

CURVE TABLE

<table>
<thead>
<tr>
<th>NO.</th>
<th>RADIUS</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>44</td>
<td>24.6</td>
</tr>
<tr>
<td>C2</td>
<td>81</td>
<td>24.2</td>
</tr>
</tbody>
</table>

ANGLE POINT NOTES:

3. IF NO STORM DRAINAGE LINE EXISTS, INSTALL 12" STORM SEWER PIPE AND CATCHBASINS PER DETAIL. MAINTAIN 2’ MINIMUM COVER OVER PIPE. SLOPE TO MATCH GUTTER GRADE.

3A. IF A STORM DRAINAGE LINE EXISTS, INSTALL CATCHBAINS ON THE UPHILL SIDE OF THE ANGLE POINTS. CONNECT TO EXISTING STORM LINE WITH 12" STORM SEWER PIPE. MAINTAIN 2’ MINIMUM COVER OVER PIPE, GRADE TO DRAIN.

5. CEMENT CONCRETE TRAFFIC CURB (SEE CITY OF OLYMPIA STANDARD PLAN 4–14) INSTALL EXPANSION JOINTS AT EACH END AND 10'± ON CENTER.

6. 1' TOP SOIL, TYPE C OR AS DIRECTED BY ENGINEER.

7. LANDSCAPING.

8. DOUBLE YELLOW CENTER STRIPE WITH RPM’S AS LOCATED IN THE FIELD BY THE ENGINEER SEE CITY OF OLYMPIA STANDARD DRAWING 4–27B.

APPROVED BY
FRAN R. EIDE, PE
CITY ENGINEER

REVISED DATE
9/1/2015

CITY OF OLYMPIA
TWO-WAY ANGLE SLOW POINT

STD. DWG. NO.
4–13C1

SHEET 1 OF 2
ANGLE POINT NOTES:

1. IF NO STORM DRAINAGE LINE EXISTS, INSTALL 12" STORM SEWER PIPE AND CATCHBASINS PER DETAIL. MAINTAIN 2' MINIMUM COVER OVER PIPE. SLOPE TO MATCH GUTTER GRADE.

2. IF A STORM DRAINAGE LINE EXISTS, INSTALL CATCHBASINS ON THE UPHILL SIDE OF THE ANGLE POINTS. CONNECT TO EXISTING STORM LINE WITH 12" STORM SEWER PIPE. MAINTAIN 2' MINIMUM COVER OVER PIPE. GRADE TO DRAIN.

3. CEMENT CONCRETE TRAFFIC CURB (SEE CITY OF OLYMPIA STANDARD DRAWING 4-14) INSTALL EXPANSION JOINTS AT EACH END AND 10'± ON CENTER.

4. 1' TOP SOIL, TYPE C OR AS DIRECTED BY ENGINEER.

5. LANDSCAPING.

6. DOUBLE YELLOW CENTER STRIPE WITH RPM'S AS LOCATED IN THE FIELD BY THE ENGINEER SEE CITY OF OLYMPIA STANDARD DRAWING 4-27B.
12" MINIMUM OF 3 DAY APPROACH CONCRETE OR MATCH EXISTING DEPTH OF AC/CONCRETE ROADWAY WHICH EVER IS GREATER (BROOM FINISH)

FROM CENTER OF ISLAND 48"

1/2 ISLAND WIDTH = 18" TO CURB FACE

EXISTING AC/CONCRETE DEPTH VARIES

SEE BLOW UP

24" TO 36" VARIES

SA= CURB HEIGHT 3 1/2" MINIMUM TO 4" MAXIMUM
S1= EXISTING AC SLOPE VARIES

SECTION A-A

2" C.S.T.C.

EXISTING EARTH

MEDIAN CHANNELIZATION END DETAIL

MOUNTABLE CONCRETE ISLAND DETAIL

EJ= EXPANSION JOINTS (3/8" WITH 1/2" RADIUS TYPICAL)

NOTES:
1. MAINTAIN 10.5’ MIN. LANE WIDTH AT ALL TIMES FROM CURB FACE TO CURB FACE.
2. CENTER NEW ISLAND BETWEEN EXISTING CURBS AND EXISTING MOUNTABLE CURB ISLAND.
3. CONCRETE TO BE Poured TO AC. SAW CUT EDGE. AC. PATCHING SHALL NOT BE ALLOWED.
4. RPMS TYPE 2 YY.

CITY OF OLYMPIA

APPROVED BY: FRAN R. EIDE, PE
REVISED DATE: 9/1/2015
CITY ENGINEER

MOUNTABLE CONCRETE TRAFFIC ISLAND FOR TWO-WAY ANGLE SLOW POINT

STD. DWG. NO.: 4-13D
NOTES:
1. EXPANSION JOINT MATERIAL TO BE 3/8" THICK REMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE.
2. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE POURING CONCRETE.
3. JOINTS SHALL BE TROWELED AND FINISHED FORMED, PERPENDICULAR TO STREET AND EXPOSED.
4. CONCRETE SHALL BE CLASS 3000.
5. BROOM FINISH TO BE PARALLEL TO STREET.
6. USE ON STREET CLASSIFICATIONS WHERE BIKE LANE IS REQUIRED OR PLANNED.
NOTES:
1. APPROVAL OF CITY ENGINEER REQUIRED.
2. CANNOT BE INSTALLED ADJACENT TO BIKE LANE. USE CEMENT CONCRETE TRAFFIC CURB (CITY OF OLYMPIA STANDARD DRAWING 4-14) INSTEAD.
3. REFER TO EDDS CHAPTER 4, STREET CLASSIFICATIONS FOR CURB AND GUTTER PLACEMENT.
5. EXPANSION JOINT MATERIAL TO BE 3/8” THICK PREMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE SPACING.
6. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE POURING CONCRETE.
NOTES:
1. APPROVAL FROM THE PUBLIC WORKS DEPARTMENT IS REQUIRED PRIOR TO DESIGN AND CONSTRUCTION.
2. ASPHALT CONCRETE WEDGE CURB HAS LIMITED APPLICATION.
NOTES:
1. APPROVAL FROM THE PUBLIC WORKS DEPARTMENT IS REQUIRED PRIOR TO DESIGN AND CONSTRUCTION.
2. CEMENT CONCRETE WEDGE CURB & GUTTER HAS LIMITED APPLICATION.
3. FORM AND SUBGRADE INSPECTION REQUIRED BEFORE POURING CONCRETE.
4. CONCRETE SHALL BE CLASS 3000 PORTLAND CEMENT CONCRETE.
5. DUMMY JOINTS SHALL BE PLACED ON 15 FT. CENTERS UNLESS ABUTTING SIDEWALKS, WHERE JOINTS SHALL BE ALIGNED WITH EXISTING SIDEWALK DUMMY JOINTS, THROUGH JOINTS, ETC.
6. EXPANSION JOINT MATERIAL TO BE 3/8" THICK PREMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE SPACING.
NOTES:
1. ASPHALT AND/OR CONCRETE SHALL BE CUT BACK A MINIMUM OF 12” TO ACCOMMODATE FORM STAKING.
2. CONCRETE PAVEMENT TO BE REMOVED IF MONOLITHIC W/CURBS.
3. MINIMUM OF 3” A.C. ON LOCAL & COLLECTOR, MINIMUM OF 4” A.C. ON ARTERIAL.
4. SEAL EDGES WITH EMULSIFIED ASPHALT GRADE CSS-1 TACK. ALL JOINTS SHALL BE SEALED USING PAVING ASPHALT AR4000W.
CLASS I BIKE PATH

CLASS II BIKE LANE

CLASS III BIKE ROUTE

CLASS IV SHARED ROADWAY

* WIDEN VEHICLE TRAVEL LANE
NOTES:
1. SEE DEVELOPMENT GUIDELINE 46.070 FOR ADDITIONAL REQUIREMENTS.
2. LOCATE OUTSIDE INTERSECTION SIGHT-DISTANCE OBSTRUCTION AREAS.
THE UNIT SHALL CONTAIN THE FOLLOWING ADDITIONAL EQUIPMENT:
- MECHANICAL CONTACTOR FOR EACH STREETLIGHT CIRCUIT
- ONE TEST SWITCH
- ONE PHOTOCELL
- 5TH JAW IN 9 O'CLOCK POSITION

THE UNIT SHALL BE SET UP TO ACCEPT:
- ONE TIME CLOCK

SPECIFICATIONS
1. STANDARD VOLTAGE IS 120/240V 10/3W.
2. CALTRANS TYPE 3B SERVICE OR U.L. APPROVED EQUIAL.
3. TYPE 3R RAINPROOF ENCLOSURE.
4. ALUMINUM ANODIZED CONSTRUCTION.
5. INTERIORS WILL ACCEPT PLUG-IN BREAKERS (BRYANT, G.E., WESTINGHOUSE, ITE, CROUSE-HINDS).
6. DETACHABLE PADMOUNT SUB-BASE.
7. COPPER BUSSED INTERIOR HAS PROVISIONS FOR TWELVE FULL ONE-INCH POLES.
8. SUITABLE FOR USE WITHOUT A MAIN WHEN NO MORE THAN SIX SERVICE DISCONNECTS ARE INSTALLED AND USED IN ACCORDANCE WITH ARTICLE 384 OF THE NEC.

WIRING DIAGRAM

CONCRETE BASE

FOUNDATION

PADMOUNT BASE BEFORE INSTALLATION ON OR IN CONCRETE FOUNDATION

10" RECOMMENDED SIDE CLEARANCE

36" MIN. CLEARANCE REQUIRED PER N.E.C. 110-16 TYP. FRONT AND BACK.

FLOOR PLAN

GROUND ROD

SERVICE TERM. SECTION

CUSTOMER SECTION

17" ENCL. DEPTH

14.5" 12.25" 6.5"

CITY OF OLYMPIA

SERVICE DISCONNECT FOR STREETLIGHTS & TRAFFIC SIGNALS

4-19

APPROVED BY
FRAN R. EIDE, PE
CITY ENGINEER

REVISED DATE
9/1/2015
2" DIA. BRASS DISK MARKED AS SHOWN

2" DIA. BRASS DISK CENTERED IN CORE

10" DIA. CORE

PLAN VIEW

ALL JOINTS SHALL BE SEALED USING PAVING ASPHALT AR4000W OR APPROVED EQUAL.

5"

5"

24"

ASPHALT

CRUSHED STONE

GRAVEL BASE

COMMERCIAL CONCRETE

SUBGRADE

No. 4 x 6" REBAR (3 EACH, FOR MAGNETIC DETECTION REQUIREMENT)

SECTION VIEW

NOTES:
1. THIS MONUMENT TO BE USED PRIMARILY IN BITUMINOUS OR ASPHALT CONCRETE PAVEMENT AND CENTERLINE MEDIAN LANDSCAPED AREAS. PRIMARILY USED IN SUBDIVISIONS AND MINOR ARTERIALS.
2. CAP SHALL BE A 2" OR LARGER BRASS DISK PLUG MARKER.
3. BRASS DISK SHALL BE SET FLUSH TO TOP OF CONCRETE AT 1/2" BELOW FINISH ASPHALT SURFACE TO PREVENT DAMAGE FROM VEHICLES AN MAINTENANCE EQUIPMENT.
4. THE LETTERING ON THE BRASS DISC SHALL BE ORIENTED NORTH.
5. THE CORNER MARK "X" OR HOLE PUNCH SHALL BE WITHIN 1/2" OF DISC CENTER.
6. ALL CONSTRUCTION AND MATERIALS SHALL MEET THE SPECIFICATIONS AND BE APPROVED BY THE CITY ENGINEER.

CITY OF OLYMPIA

POURED IN PLACE MONUMENT

4-20
NOTES:
1. MONUMENTS IN UPAVED AREAS ARE NOT REQUIRED TO BE SET PER THIS DETAIL.
2. THIS MONUMENT TO BE USED PRIMARILY IN COLLECTORS AND MAJOR ARTERIALS.
3. BRASS OR ALUMINUM CAP SHALL BE 2" OR LARGER.
4. AREA EXCAVATED TO INSTALL MONUMENT SHALL BE BACKFILLED WITH CSTC TO
   WITHIN 9 INCHES OF FINISHED GRADE (THE BOTTOM OF THE MONUMENT CASE) AND
   COMPACTED TO 95% OF MAXIMUM DENSITY. THE VOID INSIDE THE MONUMENT CASE
   SHALL ALSO BE FILLED WITH CSTC TO THE BOTTOM OF THE BRASS/ALUMINUM CAP.
5. ADJUST MONUMENT CASE IN ASPHALT TO 1/4 INCH BELOW FINISH GRADE.
6. "MON" SHALL BE CAST INTO THE LID.
7. THE LETTERING ON THE BRASS DISC SHALL BE ORIENTED NORTH.
8. THE CORNER MARK "X" OR HOLE PUNCH SHALL BE WITHIN 1/2" OF DISC CENTER.
9. ALL CONSTRUCTION AND MATERIALS SHALL MEET THE SPECIFICATIONS AND BE
   APPROVED BY THE CITY ENGINEER.
NOTE:

1. DESIGN FOR ROCK RETAINING WALL AND DRAINAGE SYSTEM, INCLUDING PERFORATED PIPE DIAMETER, SHALL CARRY THE SEAL OF CIVIL ENGINEER EXPERIENCED IN SOIL MECHANICS.
EXISTING GRASS

TOP SOIL 4" MINIMUM DEPTH

SOD AS REQUIRED

LOOSE 5/8" CRUSHED ROCK

#4 RE-BAR PINS (2 PINS PER TIMBER)

6"X 8"X 8" TREATED TIMBER OR R/R TIE
(SEE DETAIL BELOW)

6" TYPICAL

2' MIN

GROUND COVER MATERIAL
1" BELOW SIDEWALK GRADE

4' MAX

18"

4" SIDEWALK

COMPACTED CRUSHED ROCK

#4 RE-BAR, 24" IN GROUND
(2 PINS PER TIMBER)

NOTE:
1. PRE DRILL ALL RE-BAR HOLES
2. SIMILAR DESIGN SHALL BE USED WHEN GROUND ELEVATION IS LOWER THAN BACK OF SIDEWALK.

CITY OF OLYMPIA

LANDSCAPE TIMBERS

4-26A
Typical Centerline Pavement Marking Detail

Lane Widths as shown on plans (Typ.)

Typical Spacing

Type 2yy

12.5' 15' 12.5'

RPM 2" from line

Lane Widths as shown on plans (Typ.)

Edge Line or Curb

See note 2 for RPM spacing on curve

 Typical Lane Striping

Type 2w RPM

Typ. Lane Line Marking (White)

Lane Widths as shown on plans (Typ.)

Edge Line or Curb

Notes:
1. Railroad crossing markings, where applicable, shall conform to the MUTCD and WSDOT standard plan M-11.10-01. The "standard symbol" shall be used.
2. Raised pavement markers (RPM) types 2yy, 2y and 2wr shall be spaced at 20 foot intervals on horizontal curves of radius 1000 feet or less, or as directed by the engineer.
TYPICAL RIGHT TURN LANE STRIPING

EDGE LINE OR CURB

WIDE LINE STRIPE (WHITE)

INSTALL "ONLY" IF DIRECTED BY ENGINEER.

B'  16'  B'
(TYP)

TYPICAL LEFT TURN LANE STRIPING

WIDE LINE STRIPE (WHITE)

LENGTH SHOWN ON PLANS

TYPICAL DOUBLE YELLOW CENTER LINE

OR RAISED PAVEMENT MARKERS

DOUBLE YELLOW CENTER LINE

RPM 2" FROM LINE

TRAFFIC ARROW PLACEMENT

<table>
<thead>
<tr>
<th>TURN LANE LENGTH (L)</th>
<th>DISTANCE FROM STOP LINE OR CROSSWALK (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP TO 75 FT.</td>
<td>FIRST ARROW</td>
</tr>
<tr>
<td></td>
<td>[L]</td>
</tr>
<tr>
<td>&gt;75 FT. &amp; UP TO 150 FT.</td>
<td>50</td>
</tr>
<tr>
<td>&gt;150 FT. &amp; UP TO 250 FT.</td>
<td>50</td>
</tr>
<tr>
<td>&gt;250 FT. &amp; UP TO 350 FT.</td>
<td>50</td>
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</tbody>
</table>

NOTE:
1. RAILROAD CROSSING MARKINGS SHALL CONFORM TO THE M.U.T.C.D. AND W.S.D.O.T. STANDARD PLAN H–5C.
2. PAVEMENT WORDS AND SYMBOLS PER M.U.T.C.D. AND SHALL BE PLASTIC.
TWO WAY LEFT TURN LANE

- TYPE 2SL ARROWS
- RPM 2” FROM LINE
- TYPE 2Y RPM (SEE DETAIL)
- TYP. TWO WAY LEFT TURN LANE LINE (YELLOW)
- TYPE 2YY RPM
- TYPE 2SL ARROWS
- REFLECTIVE
- NON-REFLECTIVE
- TYPE 2Y R.P.M. DETAIL

PAVEMENT SYMBOLS SHALL BE PLASTIC.

NOTES:
1. TWO WAY TURN LANE ARROW PLACEMENT: 50 FT. FROM START AND END OF LANE.
2. NUMBER OF ARROWS IN BETWEEN SHALL BE DETERMINED BY: TOTAL LANE DISTANCE / 300
3. ARROWS SHALL BE EVENLY SPACED.
4. RAILROAD CROSSING MARKINGS SHALL CONFORM TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).
TYPE 1 INDUCTION LOOP
PLACE SYMBOL 6" FROM STOP BAR.
IF NO STOP BAR, PLACE SYMBOL 2’ 6” FROM CROSSWALK LINE

TYPE "D" LOOP FOR BIKE LANES
PLACE SYMBOL 6” FROM STOP BAR.
IF NO STOP BAR, PLACE LOOP 2” FROM THE CROSSWALK LINE AND SYMBOL 2’ 6” FROM THE CROSSWALK LINE.

BICYCLE DETECTOR SYMBOL LOCATION

NOTE:
1. INSTALL STOP BAR ONLY IF SHOWN ON STRIPING PLANS OR IF DIRECTED BY THE ENGINEER.
NOTES:
1. DOTTED EXTENSION LINE SHALL BE THE SAME COLOR AS THE LINE IT IS EXTENDING.
2. EDGE LINE SHALL BE WHITE ON THE RIGHT EDGE OF TRAVELED WAY, AND YELLOW ON THE LEFT EDGE OF TRAVELED WAY (ON ONE-WAY ROADWAYS). SOLID LANE LINE SHALL BE WHITE.
Approved Conductor Support

Service Disconnect
See City of Olympia Standard Drawing 4-19

3–#3 AWG Copper, Min.

Power Vault

#8 Copper Ground Wire

Install and connect to ground rod per WSDOT Std. J-9a

Waterproof splice, 18" Min. slack wire above Box

Equirement ground from service to each pole

3–#8 AWG Copper, Min.

Each Branch Circuit to be 3–#8 AWG Copper, with a 40 amp 2–pole breaker minimum

1–1/2" Sch. 40 PVC conduit, use bell ends or bushings

Junction Box per WSDOT Std. 40.10–00

Rome Pole & Bracket Cable, or Approved Equal

2–STD., Electrical Code 1791–SF & FNM–5 Fuses, or Approved Equal

City of Olympia

Typical Street Light Installation

4–31
TYPICAL STREET LIGHT INSTALLATION

NOTES:
1. ALL REINFORCING STEEL SHALL HAVE 2-1/2" CLEAR COVER OF CONCRETE.
2. PROVIDE WATER TIGHT GROUT JOINT BETWEEN BASE OF POLE AND CONCRETE.
3. PROVIDE 3/8" EXPANSION JOINT WHEN PLACED IN A SIDEWALK AREA (TYP).
4. 1-1/2" MINIMUM CONDUIT. TYPE AND SIZE CONDUIT BETWEEN BASES AS SHOWN ON THE PLANS. USE OF NON-METALLIC CONDUIT IS PERMISSIBLE. CONDUIT SHALL BE PLACED WITHIN THE BACK OR FRONT 12" OF NEW OR PROPOSED SIDEWALK LINE UNLESS OTHERWISE APPROVED.
5. ANCHOR BOLTS AND BOLT CIRCLE TO MEET MANUFACTURE SPECIFICATIONS. SET BOLT HEIGHT TO PERMIT DOUBLE LOCKNUT FOR ADJUSTMENT.

APPROVED CONDUCTOR SUPPORT
ROME POLE & BRACKET OR APPROVED EQUAL
POWER VAULT
3-#3 AWG CU, MIN.
SERVICE
2-SEC. 1791-SF & FNW-5 FUSES, OR APPROVED EQUAL
#8 CU. GROUND WIRE
INSTALL AND CONNECT TO GROUND ROD PER WSDOT STD. J-9a
WATERPROOF SPLICE, 18" MIN. SLACK WIRE ABOVE BOX

JUNCTION BOX PER WSDOT STD 40.10-00
1-1/2" SCH. 40 PVC CONDUIT, USE BELL ENDS OR BUSHINGS
3-#8 AWG CU, MIN.

TYPICAL BASE DETAIL

FINISHED GRADE
4" 1" MIN.
1-1/2" MIN. CONDUIT
3' SQUARE OR ROUND

GALVANIZED STEEL ANCHOR BOLTS (4 EA.)
4-#3 HOOPS
8-#5 BARS EVENLY SPACED
CLASS 3000 CEMENT CONCRETE

STREET LIGHT POLE
LEVELING NUTS AND WASHERS
EXPANSION MATERIAL

CITY OF OLYMPIA
STREET LIGHT INSTALLATION DETAILS COMBINED
FRAN R. EIDE, PE
CITY ENGINEER
2/24/2017
4-31A
NOTES:
1. INSTALL STOP BAR ONLY IF SHOWN ON STRIPING PLANS OR IF DIRECTED BY THE ENGINEER.
2. IT IS THE INTENT OF THE ENGINEERING DESIGN AND DEVELOPMENT STANDARDS TO HAVE CONSTRUCTED ACCESS RAMPS THAT MINIMIZE PEDESTRIAN CROSSING DISTANCES, AND POSITION PEDESTRIANS WHERE THEY CAN BEST BE SEEN BY ONCOMING TRAFFIC. CURB RAMP ORIENTATION WILL ALIGN PEDESTRIANS PARALLEL WITHIN THE LATERAL EXTENSION LINES OF THE SIDEWALK. INTERSECTION RADIUS LESS THAN 35' WILL USE TWO PERPENDICULAR CURB ACCESS RAMPS PER CORNER. WHERE INTERSECTION CORNERS ARE OFF-SET, CURB ACCESS RAMPS WILL ORIENT DIAGONALLY TO THE OPPOSING CURB ACCESS RAMP. DISTANCE BETWEEN ACCESS RAMPS WILL NOT BE LESS THAN 3' WITH A SLOPE NO GREATER THAN 7.5%. CENTER AND DIRECTION OF RAMP SHALL BE LOCATED WITHIN CROSSWALK LINES AS CLOSE AND PARALLEL AS TO CROSSWALK CENTERLINE AS POSSIBLE.
3. ROADWAY WIDTHS MAY VARY IN RETROFIT SITUATIONS. STANDARD LANE WIDTH IS 10 FEET.
NOTE:
1. THE MARKING DESIGN SHOULD AVOID THE WHEEL PATHS AND THE SPACING SHOULD NOT EXCEED 4 FEET.
NOTES:
1. ALL REINFORCING STEEL SHALL HAVE 2-1/2" CLEAR COVER OF CONCRETE.
2. PROVIDE WATER TIGHT GROUT JOINT BETWEEN BASE OF POLE AND CONCRETE.
3. PROVIDE 3/8" EXPANSION JOINT WHEN PLACED IN A SIDEWALK AREA (TYP).
4. 1-1/2" MINIMUM CONDUIT. TYPE AND SIZE CONDUIT BETWEEN BASES AS SHOWN ON THE PLANS. USE OF NON-METALLIC CONDUIT IS PERMISSIBLE. CONDUIT SHALL BE PLACED WITHIN THE BACK 12" OF NEW OR PROPOSED SIDEWALK LINE UNLESS OTHERWISE APPROVED.
5. ANCHOR BOLTS AND BOLT CIRCLE TO MEET MANUFACTURE SPECIFICATIONS. SET BOLT HEIGHT TO PERMIT DOUBLE LOCKNUT FOR ADJUSTMENT.
6. CHECK SHOP DRAWINGS TO ENSURE SHROUD COVERS ANCHOR BOLT PAD AND MAKE SURE ANCHOR BOLTS HAVE ENOUGH COVERAGE.
NOTES:
1. THE FOUNDATION IS DESIGNED FOR 2000 PSP AVERAGE SOIL LATERAL BEARING PRESSURE.
2. BOLT PATTERN PER MANUFACTURES SPECIFICATIONS.
3. FOR DETAILS NOT SHOWN USE MANUFACTURES SPECIFICATIONS AND DETAILS.
4. THE MINIMUM DISTANCE FROM FACE OF CURB TO THE FACE OF LUMINARIE IS 2 FEET–6 INCHES.
5. INSTALL EXPANSION JOINTS ON THREE SIDES OF J–BOX.
6. FOUNDATION HOLES SHALL BE AUGURED. IF HOLES ARE DUG, BACKFILL SHALL MEET WSDOT/APWA SECTION 8–20.3 AND 2–09.3 (1) E.

APPROVED BY
FRAN R. EIDE, PE
CITY ENGINEER

REVISED DATE
9/1/2015

CITY OF OLYMPIA
LUMINARIE FOUNDATION FOR PEDESTRIAN SCALE POLES

STD. DWG. NO.
4–33A
NOTES:
1. ALL REINFORCING STEEL SHALL HAVE 2‐1/2" CLEAR COVER OF CONCRETE.
2. PROVIDE WATER TIGHT GROUT JOINT BETWEEN BASE OF POLE AND CONCRETE.
3. PROVIDE 3/8" EXPANSION JOINT WHEN PLACED IN SIDEWALK AREA.
4. 2" MINIMUM CONDUIT SIZE. BUSHING OR BELL ENDS REQUIRED ON CONDUIT. USE OF NON‐METALLIC CONDUIT IS PERMISSIBLE.
5. ANCHOR BOLTS AND BOLT CIRCLE TO MEET MANUFACTURE SPECIFICATIONS. SET BOLT HEIGHT TO PERMIT DOUBLE LOCKNUT FOR ADJUSTMENT.
PARTS LIST:
1. FLASHER, TRAFFIC SENSOR CORP., PN 25 DF
2. BEACON, TRIPPLITE, MARK VI 120VAC WITH CLEAR LENS
3. NIPPLE, 1/2"X 6"
4. CONDUIT BODY, T 1/2"X 1/2"X 3/4" OR LB 1/2"x 3/4"
5. NIPPLE, 3/4"X 4"
6. NIPPLE, 1/2"X 6"
7. BELL, FEDERAL SIGNAL CORP., 700-120-1 HOUSED IN A FEDERAL SIGNAL CORP. GRAY WEATHER PROOF BOX, MODEL WB
8. GONG, FEDERAL SIGNAL CORP., MODEL A10

BEACON / GONG WIRING SCHEMATIC

LOAD 1
AC COM
AC LINE
LOAD 2

BELL

MOTOR

LIGHT

2 PED. YELLOW

AC−
NOTES:
1. TYPE III OR IV REFLECTIVE SHEETING SHALL BE USED FOR BACKGROUND, LETTERS, NUMERALS AND BORDERS.
2. SIGN BLANK SHALL BE 0.080 INCH SHEET ALUMINUM.
3. SIGN LAYOUT SHALL BE ACCORDING TO DETAIL SHOWN ABOVE.
4. DIMENSIONING SHALL BE IN ACCORDANCE WITH THE "WASHINGTON STATE SIGN FABRICATION MANUAL".
5. WITH APPROVAL OF THE ENGINEER, C SERIES LETTERS AND NUMERALS CAN BE SUBSTITUTED FOR THE D SERIES LETTERS AND NUMERALS IF THE MAXIMUM SIGN LENGTH OF SEVEN FEET IS EXCEEDED USING D SERIES LETTERS.
Olympia Ave
SE 200

LENGTH AS NEEDED
(MIN. 26" and 54" MAX.)

SEE DOUBLE SIGN MOUNTING DETAIL (TYP)

STAINLESS STEEL BOLTS, NUTS AND FLAT WASHERS (TYP.)

STREET NAME SIGN

2" X 2" OD BREAKAWAY SQUARE POST (SEE CITY OF OLYMPIA STANDARD DRAWING 4-45)

TOP VIEW
DOUBLE SIGN MOUNTING DETAIL

NOTES:
LETTERING REQUIREMENTS;
1. STANDARD LETTER SERIES "C" AND LETTER SPACING AS PER WASHINGTON STATE DEPARTMENT OF TRANSPORTATION SIGN FABRICATION MANUAL SHALL BE USED.
2. LETTERING SHALL BE A COMBINATION OF UPPER AND LOWER CASE LETTERS PER THE 2009 FEDERAL HIGHWAY ADMINISTRATION (FHWA) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). STREET NAME WILL BE ALL LOWER CASE WITH THE FIRST LETTER UPPER CASE, IF THE STREET IS NUMBERED THEN THE SUFFIX OF THE STREET NUMBER SHALL BE LOWER CASE AND SHALL BE 1/4 HEIGHT OF THE NUMBERED CAPITAL LETTERS.
3. USE STANDARD ROADWAY DESIGNATIONS AND AREA ABBREVIATIONS AS INDICATED.

SIGN MANUAL REQUIREMENTS;
4. COLOR;
   4.1. BACKGROUND — GREEN (REFLECTIVE SHEETING)
   4.2. LEGEND — WHITE (REFLECTIVE SHEETING)
   4.3. BORDER — WHITE (REFLECTIVE SHEETING)
5. SIGN BLANKS SHALL BE 0.080" SHEET ALUMINUM.
6. REFLECTIVE SHEETING SHALL BE TYPE III OR IV MICROPRISMATIC MATERIAL FOR BACKGROUND, LETTERS, NUMERALS AND BORDERS.

GENERAL NOTATIONS;
7. ALL STREET NAME SIGNS SHALL BE SINGLE SIDED WITH DOUBLE SIGN MOUNTING. SEE DOUBLE SIGN MOUNTING DETAIL FOR GROUND MOUNTED SIGNS.
8. ENGINEER SHALL APPROVE FACE COPY PRIOR TO FABRICATION.
NOTE:
1. PAINT 8" WHITE EDGE STRIPE OVER RAISED CHIP SEAL PAVEMENT MARKING.
2. MATERIAL USED FOR CHIP SEAL RUMBLE STRIP ADHESIVE SHALL BE "SUPER BUNDY" AS MANUFACTURED BY FLINT TRADING, INC. P.O. BOX 160, THOMASVILLE, NC, 27361-0160 OR APPROVED EQUAL. PAVEMENT MUST BE CLEAN AND DRY. THE 3/8" PEA GRAVEL SHALL BE CLEAN AND DRY. DIMENSION FOR THE CHIP SEAL RUMBLE STRIP IS EIGHT (8) INCHES SQUARE AND SHALL BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY ENGINEER.
3. PAVEMENT MARKINGS SHALL BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
NOTE:
1. CEMENT CONCRETE TRAFFIC CURB SHALL BE USED WHEN TRAFFIC ISLAND IS LANDSCAPED.
ALL LANDSCAPING AND STRUCTURES CONSTRUCTED IN THE ISLAND SHALL BE SUBMITTED FOR APPROVAL TO THE CITY PRIOR TO CONSTRUCTION.

INSTALL TYPE 2 RPM (YY) AT 24" O.C., WITH ALTERNATING ORIENTATION (TYP.).

SEE STANDARD DRAWING 4-45 FOR TYPICAL SIGNS INSTALLATION DETAIL.

INSTALL SIGN POST AND BASE 1' INSIDE CURB, WITH BASE INSTALLED PER STANDARD DRAWING 4-45, EDGE OF ROAD (NO SIDEWALK) DETAIL (TYP.). 5' MINIMUM MOUNTING HEIGHT TO BOTTOM OF LOWEST SIGN ON POST (TYP.).

12" - #3 EPOXY COATED BARS (TYP. ALL JOINTS)

EXPANSION JOINT (TYP.) SEE NOTE 1 THIS PAGE

INSTALL TRAFFIC CIRCLE SIGNS PER STANDARD DRAWINGS 4-40D TO 4-40H, OR AS DIRECTED BY THE ENGINEER. SEE TRAFFIC CIRCLE SIGN MOUNTING DETAIL (TYP.).

NOTE:
1. EXPANSION JOINT MATERIAL SHALL BE 3/8" THICK PREMOLDED JOINT FILLER FULL THICKNESS OF CONCRETE.

SECTION A–A

APPROVED BY
FRAN R. EIDE, PE
CITY ENGINEER

REVISED DATE
9/1/2015

CITY OF OLYMPIA
TRAFFIC CIRCLE

STD. DWG. NO.
4–40A
LEGEND:
A  Street Width
B  Curb Return Radius
C  Off-Set Distance
D  Circle Diameter
E  Opening Width

INTERSECTION DIAGRAM

OPTIMUM CRITERIA

IF C = THEN E WILL BE

5.5' MAX  16' MIN
5.0'       17' +
4.5'       18' +
4.0'       19' +
3.5' OR LESS  20'

APPROVED BY  REVISED DATE  CITY OF OLYMPIA  STD. DWG. NO.
FRAN R. EIDE, PE  9/1/2015  TRAFFIC CIRCLE INTERSECTION DIAGRAM  4-40B
CITY ENGINEER
<table>
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<th>STREET WIDTH</th>
<th>CURB RETURN RADIUS</th>
<th>OFF-SET DISTANCE</th>
<th>CIRCLE DIAMETER</th>
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<td>25'</td>
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* BLACK LEGEND ON WHITE BACKGROUND (REFLECTORIZED)
* BLACK LEGEND ON WHITE BACKGROUND (REFLECTORIZED)

[Diagram of traffic circle sign detail with dimensions]

ARROW HEAD DETAIL (TYP)

2.25" R

5.5" R

1.5" R (TYP)

4.25"

4.75"

2.25"

0.25" R (TYP)

1.5"

10.25"

1.5"

2.25" R

2.25"

2.25"

1.5"

30"

16"

.625"

1"

2.25"

4"
* BLACK LEGEND ON WHITE BACKGROUND (REFLECTORIZED)

ARROW HEAD DETAIL (TYP)
* BLACK LEGEND ON WHITE BACKGROUND (REFLECTORIZED)

ARROW HEAD DETAIL (TYP)
2" GALV. PIPE POST

3/8" WEEP HOLE DRILLED TO ALLOW WATER TO DRAIN FROM POST

4" DIAMETER CORE HOLE IF BEING INSTALLED IN EXISTING SIDEWALK

8" OF METER POST BELOW SURFACE OF SIDEWALK

PIPE END SHALL BE THREADED. INSTALL 2" PIPE COUPLING TO END ATTACH WITH MIN. 3 TACK WELDS.

FACE OF CURB

METER POSTS SHOULD BE SET BACK 2" FROM CURB FACE OR IN LINE WITH OTHER METERS ON SIDEWALK.

TYPICAL POST INSTALLATION IN EXISTING SIDEWALK AREA

2" GALV. PIPE POST

3/8" WEEP HOLE DRILLED TO ALLOW WATER TO DRAIN FROM POST

PIPE END SHALL BE THREADED. INSTALL 2" PIPE COUPLING TO END ATTACH WITH MIN. 3 TACK WELDS.

WHEN METER POSTS ARE TO BE PLACED IN AREAS OTHER THAN THE SIDEWALK, A 3" X 3" X 6" CEMENT BLOCK SHOULD BE POURED IN GROUND TO SET POST IN.

METER POSTS SHOULD BE SET BACK 2" FROM CURB FACE OR IN LINE WITH OTHER METERS.

TYPICAL POST INSTALLATION OTHER THAN SIDEWALK AREA

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<th>CITY OF OLYMPIA</th>
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<td>FRAN R. EIDE, PE</td>
<td>9/1/2015</td>
<td>TYPICAL PARKING METER POST INSTALLATION</td>
<td>4-41A</td>
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</table>
TYPICAL: PAINT CURB YELLOW TO CORNER OR DRIVEWAY AS MARKED BY ENGINEER IN THE FIELD

SINGLE HEAD METER

DOUBLE HEAD METER

TYPICAL: PAINT CURB YELLOW TO CORNER OR DRIVEWAY AS MARKED BY ENGINEER IN THE FIELD

TYPICAL PARKING STALL LAYOUT

18"  3'  20'-22"  4"  7'-8"

4" PLASTIC PAVEMENT MARKINGS – PREFORMED TAPE OR SPRAYED APPLICATION (TYP)

CURB

SIDEWALK OR PLANTER

NOTES:

1. SINGLE HEAD METER POSTS SHOULD BE SET AT THE HEAD OF THE PARKING STALL IN LINE WITH ANY PARKING STALL MARKINGS (PARKING "L").

2. DOUBLE HEAD METER POSTS ARE TO BE PLACED BETWEEN PARKING STALLS, IN LINE WITH ANY PARKING STALL MARKINGS (PARKING "T").

3. MAINTAIN MINIMUM UNOBSSTRUCTED SIDEWALK WIDTH TO COMPLY WITH ADA STANDARDS.

4. IF UNSURE ABOUT METER PLACEMENT, CONTACT PROJECT INSPECTOR.

APPROVED BY: FRAN R. EIDE, PE
REVISED DATE: 9/1/2015
CITY OF OLYMPIA - TYPICAL PARKING METER POST PLACEMENT AND PARKING STALL LAYOUT
CITY ENGINEER
STD. DWG. NO.: 4-41B
NOTE:

DOUBLE YELLOW CENTER LINE WITH TYPE 2YY RPM’S ON 20 FOOT CENTERS WHEN A 9 FOOT MINIMUM TRAVEL LANE EXISTS IN BOTH DIRECTIONS. (TYPICAL)
SEE CITY OF OLYMPIA STANDARD DRAWING 4-42D FOR PLASTIC SPEED BUMP/CUSHION SYMBOL.

SEE CITY OF OLYMPIA STANDARD DRAWING 4-42D FOR EDGE DETAIL

PLASTIC LETTERS, CENTER “BUMP” SYMBOL IN TRAVEL LANE (TYP)

FACE OF CURB OR EDGE OF PAVEMENT (TYP)

NOTE:
DOUBLE YELLOW CENTER LINE WITH TYPE 2YY RPM’S ON 20 FOOT CENTERS WHEN A 9 FOOT MINIMUM TRAVEL LANE EXISTS IN BOTH DIRECTIONS. (TYPICAL)

SECTION A–A

PARABOLIC CROWN

APPROVED BY
FRAN R. EIDE, PE
CITY ENGINEER

REVISED DATE
9/1/2015

CITY OF OLYMPIA

STD. DWG. NO.
14’ SPEED BUMP
4-42C
PLASTIC SPEED BUMP/CUSHION SYMBOL

ROADSIDE DELINEATOR PLACED AT CENTER OF SHOULDER TO DISCOURAGE VEHICLES FROM DRIVING AROUND SPEED BUMP, AS DIRECTED BY THE ENGINEER.

EDGE DETAIL FOR STREETS WITHOUT CURBS

EDGE DETAIL FOR STREETS WITH CURB

APPROVED BY
FRAN R. EIDE, PE
CITY ENGINEER

REVISED DATE
9/1/2015

CITY OF OLYMPIA

STD. DWG. NO.
4-42D
NOTE:
1. SEE APPROPRIATE ROADWAY CROSS-SECTION FOR DIMENSIONS.
2. POSSIBLE LOCATION OF JOINT USE TRENCH, ST. LIGHT CONDUIT, CABLE, ETC. AS APPROVED BY CITY ENGINEER.
**EDGE OF ROAD (NO SIDEWALK)**

* Distance from edge of road may vary due to obstacles.

* Typical 6' with 2' minimum

7' to bottom of lowest sign installed on post (typ.), unless otherwise directed by the engineer.

2" square pre-punched galvanized steel tube post or approved equal.

Stainless steel 5/16" x 18 x 3 1/2" bolt and 5/16" x 18 nut

18" x 2 1/2" x 3/16" sleeve

Concrete anchor five gallon size container

Compact soil firmly around and on top of anchor. Minimum 6" of soil cover.

**SIDEWALK INSTALLATION**

** Preferred location is behind sidewalk, but if unavailable due to obstructions such as buildings or street trees, install as indicated below. If sign is placed in sidewalk, sign edge shall be a minimum of 2' from curb face.**

2" minimum

Length of post varies (10' minimum)

8" x 2 1/2" x 3/16" sleeve set in quick setting concrete material

Stainless steel 5/16" x 18 x 3 1/2" bolt and 5/16" x 18 nut

4" core hole drilled in sidewalk

5" below sidewalk

7" above sidewalk

Notes:

1. Sign posts shall be 2" square, pre-punched galvanized steel tubing. Pre-punched holes shall be 7/16th inch diameter spaced 1 inch on center. Sign post shall be 12 gauge.

2. Sign posts installed in a sidewalk shall be mounted in a 2 1/2" square outside dimension x 8" long, 3/16" wall thickness, galvanized steel tubing sleeve. The sleeve shall be predrilled with an 11/32" hole drilled through 1 1/2" from the top of the sleeve.

3. Sign posts installed in soil shall be mounted in a 2 1/2" square outside dimension x 18" long, 3/16" wall thickness, galvanized steel tubing sleeve set in a five-gallon size container, or equal, of class C cement concrete for a foundation.

4. Stainless steel bolts, nuts and flat washers shall be used to attach signs to the 2" square, pre-punched galvanized steel tubing sign posts. 5/16"-18 x 3" bolts, 5/16"-18 nuts and 5/16" flat washers shall be used. The 5/16" flat washer shall be placed between the sign and bolt head when attaching to sign post.
NOTES:
1. PROVIDE DRIVEWAY APPROACH TO ACCESS LANE PER STANDARD DRAWING 4–7.
2. SIGN "NO OUTLET" PER STANDARD DRAWING 4–45.
3. STRUCTURAL SECTION PER PAVEMENT DESIGN STANDARD DRAWING 4–6A.

PRIVATE ACCESS LANE
NOTES:
1. SIGN SHALL BE A MINIMUM OF 12 INCHES X 18 INCHES.
2. SIGN SHALL BE A WHITE REFLECTIVE BACKGROUND WITH RED LETTERING AND LINES.
3. PLACEMENT SHALL BE EVERY 100’ ON CENTER, ALTERNATING SPACING IF LOCATED ON BOTH SIDES OF STREET.
4. FOR INSTALLATION REFER TO STANDARD DRWG 4–45.
INSTALL TYPE 2YY RAISED PAVEMENT MARKERS FACING TRAFFIC. (TYPICAL BOTH ENDS)

INSTALL CONCRETE TO 1' BEYOND SIGN POST LOCATION (TYPICAL BOTH ENDS)

TRAFFIC CURB

ANGLE CROSSING ONLY WHEN RAISED ISLAND IS GREATER THAN 6 FEET WIDE.

RAISED ISLAND WIDTH VARIES

INSTALL TRUNCATED DOMES AT BOTH SIDES OF ISLAND, 2' DEEP BY FULL WIDTH OF OPENING.

4" YELLOW EDGE LINE 1' OFFSET (TYPICAL)

12" CONCRETE APRON (TYPICAL)

INSTALL LANDSCAPE MATERIALS AS PER CONTRACT PLANS (TYPICAL BOTH ENDS)

THE END OF TRAFFIC ISLAND SHALL BE IDENTIFIED WITH R4-7 AND OM1-3 SIGNS AT RADIUS POINT (TYPICAL BOTH ENDS)

"BULL NOSE" AND/OR TAPERED ENDS SHALL BE PAINTED YELLOW AND TOP COATED WITH GLASS BEADS. (TYPICAL BOTH ENDS)

REFER TO STANDARD DRAWING 4-45, "SIDEWALK INSTALLATION" AND TYPICAL SIGN INSTALLATION NOTES, FOR DETAILS ON SIGN POSTS, SLEEVES AND HARDWARE TO INSTALL SIGNS.
INSTALL TYPE 2YY RAISED PAVEMENT MARKERS FACING TRAFFIC. (TYPICAL BOTH ENDS)

INSTALL SMOOTH CONCRETE TO 1 FOOT BEYOND SIGN POST LOCATION. (TYPICAL BOTH ENDS)

PRECAST CONCRETE SLOPED MOUNTABLE CURB

ANGLE CROSSING ONLY WHEN RAISED ISLAND IS GREATER THAN 6 FEET WIDE.

INSTALL TRUNCATED DOMES AT BOTH SIDES OF ISLAND, 2' DEEP BY FULL WIDTH OF OPENING.

4" YELLOW LINE 1" OFFSET (TYPICAL)

TRAFFIC ISLAND SHALL BE BOMANITE CONCRETE OR APPROVED EQUAL, BRICK RED (B-16), RUNNING BOND BRICK PATTERN (TYPICAL BOTH ENDS)

THE END OF TRAFFIC ISLAND SHALL BE IDENTIFIED WITH R4-7 AND OM1-3 SIGNS AT RADIUS POINT (TYPICAL BOTH ENDS)

"BULL NOSE" AND/OR TAPERED ENDS SHALL BE PAINTED YELLOW AND TOP COATED WITH GLASS BEADS (TYPICAL BOTH ENDS)

REFLECTIVE BOTH SIDES

TYPE 2YY DETAIL

R4-7 24"x 30"

NO GAP IS NECESSARY BETWEEN THE R4-7 AND OM1-3 SIGNS

OM1-3 18"x 18"

SIGN SHEETING MATERIAL FOR THE OM1-3 SHALL BE TYPE III OR TYPE IV MICROPRISMATIC MATERIAL

5" MINIMUM TO BOTTOM OF R4-7

5" MINIMUM TO BOTTOM OF OM-3

TOP OF ISLAND

REFER TO STANDARD DRAWING 4-45, "SIDEWALK INSTALLATION" AND TYPICAL SIGN INSTALLATION NOTES, FOR DETAILS ON SIGN POSTS, SLEEVES AND HARDWARE TO INSTALL SIGNS

APPROVED BY
FRAN R. EIDE, PE
CITY ENGINEER

REVISED DATE
9/1/2015

CITY OF OLYMPIA

PEDESTRIAN REFUGE CONCRETE ISLAND DETAILS

STD. DWG. NO.
4-48A
NOTES:
1. CAST IN TWO PIECES.
2. NO OPENING GREATER THAN 3/8 INCH.
3. GRATE IS 1 INCH THICK WITH 1 1/4 INCH THICK SUPPORT RIBS.
4. KNOCKOUTS AT 22 INCHES AND 33 INCHES.
5. 1 INCH "TACK" OR "SPOT" WELD, BOTH SIDES.
6. ALTERNATE SIZES AND PATTERNS, SUCH AS NOMINAL 4'X8' TREE GRATES, SHALL BE SUBMITTED TO THE URBAN FORESTER FOR APPROVAL PRIOR TO INSTALLATION.
7. GRATES SHALL BE INSTALLED WITH BRACKETS AND/OR FRAMES PER THE MANUFACTURE’S RECOMMENDATION.
8. GRATE WITH FRAME TO BE INSTALLED FLUSH WITH SIDEWALK.
9. ALL GRATES SHALL MEET ADA STANDARDS.
10. TREE GRATE SHALL BE PLACED ADJACENT TO CURB, WITHIN THE SIDEWALK.

APPROVED BY  REvised DATE  CITY OF OLYMPIA  STD. DWG. NO.
FRAN R. EIDE, PE  11/13/2018  STREET TREE FRAME AND GRATE DETAILS  4-49
SEE NOTE 7 FOR STAKING REQUIREMENTS

1" CHAINLOCK TREE TIES INSTALLED NO HIGHER THAN 1' BELOW THE LOWEST LATERAL BRANCH

2" DIA. UNTREATED WOOD TREE STAKES, 8' HT INSTALL APPROX. 2" AWAY FROM EDGE OF ROTTBALL

PREVAILING WIND

PLAN VIEW STAKING DETAIL

SEE NOTES 2 & 3

3" ORGANIC MULCH 3" AWAY FROM ROOT FLARE

BACKFILL WITH NATIVE SOIL UNLESS HEAVY CLAY OR POOR SOIL

3" FIRM SOIL WATER RETENTION BASIN

SCARIFY BOTTOM AND SIDES OF PLANTING HOLE

SEE NOTES 4-6 FOR ROOTBALL TREATMENT

LOWEST LATERAL BRANCH BETWEEN 4"-6" TRUNK HEIGHT

24" STAKE DEPTH MINIMUM

3" MAX FIRM MOUND OF SOIL TO PREVENT SETTLING

SECTION VIEW PLANTING DETAIL

Notes:
1. ALL TREES SHALL MEET ANSI AZ60.1 AND OMC 16.60 STANDARDS.
2. LOOK FOR EXCESSIVE SOIL ON THE ROOT BALL COVERING ROOT FLARE AND REMOVE TO EXPOSE ROOT FLARE.
3. BOTTOM OF ROOT FLARE SHALL BE AT FINISH GRADE IN WELL DRAINED SOIL AND 2" ABOVE FINISH GRADE IN POORLY DRAINED SOIL.
4. B&B TREES: COMPLETELY REMOVE WIRE BASKET AND TREATED OR SYNTHETIC BURLAP AND TWINE. REMOVE NATURAL TWINE AND BURLAP FROM TOP AND SIDES OF ROOTBALL.
5. CONTAINERIZED TREES: SHAVE THE OUTER 1-2" OF SOIL FROM ROOT BALL WITH SHARP KNIFE.
6. GROW BAG TREES: REMOVE BAG COMPLETELY.
7. STAKE ONLY IF REQUIRED BY PROJECT FORESTER OR NECESSARY FOR TREE STABILITY. REMOVE STAKES AFTER 1 YEAR.
8. PRUNE DAMAGED OR BROKEN BRANCHES. NO OTHER PRUNING SHALL BE DONE AT PLANTING.
3" ORGANIC MULCH 3" AWAY FROM ROOT FLARE

4' X 4' OR LARGER CAST IRON GRATE, SEE NOTE 9

TREE GRATE FRAME TO BE SET IN CONCRETE SIDEWALK PER MANUFACTURE REQUIREMENTS

SCARIFY BOTTOM AND SIDES OF PLANTING HOLE

BACKFILL PLANTING HOLE WITH IMPORTED TOPSOIL PER SPECIFICATIONS

SEE NOTES 4--6 FOR ROOTBALL TREATMENT

EXISTING ROAD FILL TO BE REMOVED TO A MINIMUM DEPTH OF 4'

12"

LOWEST LATERAL BRANCH BETWEEN 4’–6’ TRUNK HEIGHT

3" MAX FIRM MOUND OF SOIL TO PREVENT SETTLING

SECTION VIEW PLANTING DETAIL

NOTES:
1. ALL TREES SHALL MEET ANSI AZ60.1 AND OMC 16.60 STANDARDS.
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